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The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

March 9, 1928 **Volume 48. No. 12**

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BATON ROUGE, LA.
MAR 9 - 1928

More than 5000 feet of this hole successfully drilled with

HUGHES ROCK BITS

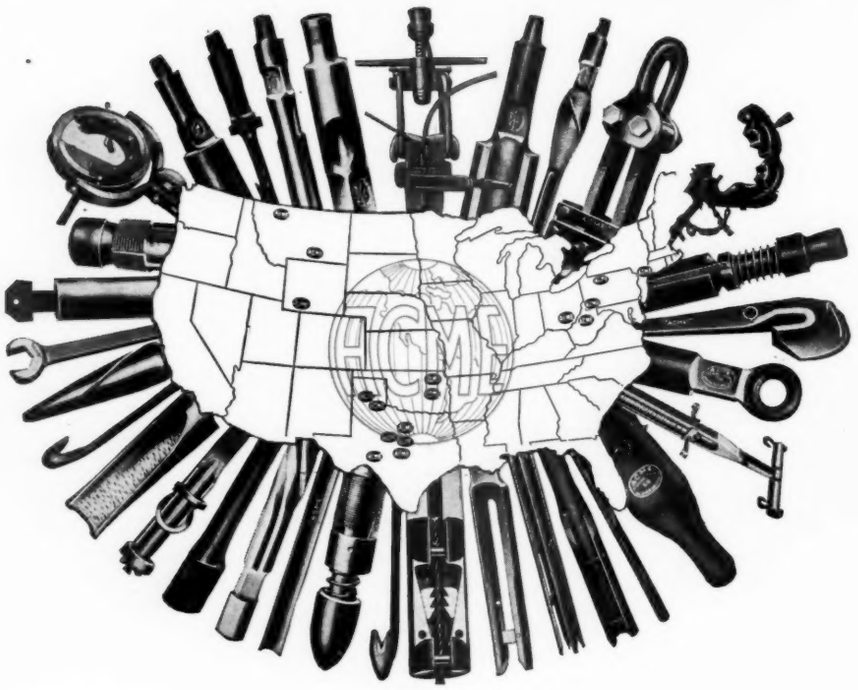
Right to Left—
H. W. Ballard
L. C. Tompkins
C. A. Ridley

Thompson No. 1—Wirt Franklin & Cromwell Oil and Gas Company,
Oklahoma County, Okla.

Majority of formation after 2000 ft.—gray lime and shale. { 4700 ft.—11" Hole / 1960 ft.—7 7/8" Hole } 7⅞ hole drilled entirely with Hughes Rock Bits

HUGHES TOOL CO., Houston, Texas

ACME
DRILLING BIT



ACME
TRIP CASING
SPEAR

Drilling & Fishing Tools that save needless sacrifice of time and expense

Acme admits to building a fine line of tools. But Acme is only the name of the *organization*—composed of competent fishermen and drillers, backed up by an experienced manufacturing personnel, operating a modern plant—which is really responsible. Into each tool is put every tried and practical, trouble-proof and trouble-solving feature that has been proven valuable by their long field experience and technical tool producing knowledge.

Acme Drilling Tools save Fishing Tool Rents; Acme Fishing Tools keep down rental costs and fishing delays. Try them on the next well. The nearest of our stores will give you sweet and snappy service.

Acme Fishing Tool Co.

Parkersburg, West Virginia

Export Office: 136 Liberty St., New York City, N. Y.

WAREHOUSES AND DISTRIBUTORS:

Acme Fishing Tool Co. Okmulgee, Okla.

B. & A. Specialty Co. Tulsa, Okla.

Acme Fishing Tool Co. of Texas, Whittenburg, Texas.

Acme Rental Tool Service Co., Graham, Tex.

Acme Tool Co., Cross Plains, Texas.

Acme Tool Co., Fry, Texas.

Acme Tool Co., McCamey, Texas

Acme Tool Co., Pyote, Texas.

Logan Foundry & Machine Co., Logan, Ohio.

The Birnie Oil Tool Works, Owensboro, Ky.

WAREHOUSES AND DISTRIBUTORS:

Acme Tool Co., Breckenridge, Texas.

Acme Tool Co., Albany, Texas

Acme Tool Co., Brownwood, Texas

Midland Iron Works, Billings, Montana

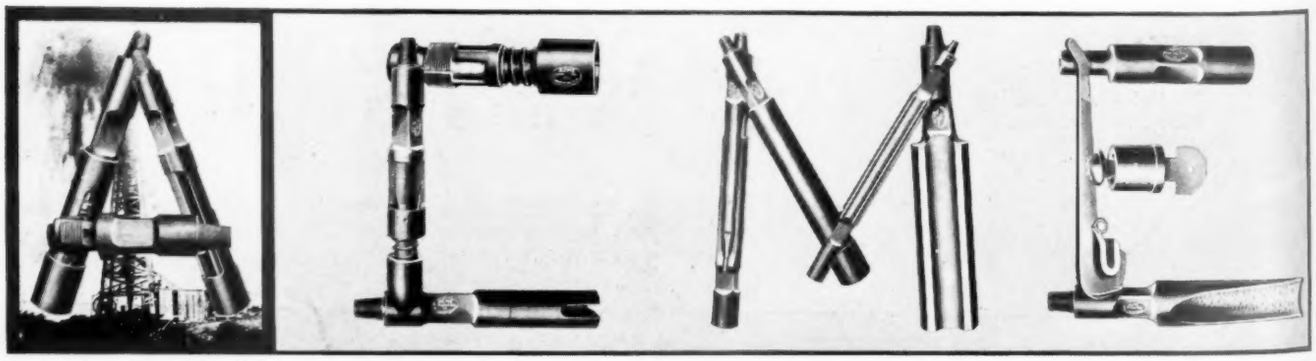
Great Northern Tool & Supply Co., Kevin, Montana

Great Northern Tool & Supply Co., Kemmerer, Wyo.

Great Northern Tool & Supply Co., Cody, Wyoming

Elms Brothers & Co., Waynesburg, Penna.

Lloyd Smith Company, Bradford, Penna.



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PREPAREDNESS

THE Navy is the mobile, the quick moving section of American defense. At the slightest indication of trouble a ship or a fleet is rushed to the scene.

The Portable Pumping Unit is the "navy" of the GASO line. It also is dispatched to the scene at the slightest indication of trouble. Is there a break in the pipe line? The Portable Unit is rushed on its own trailer to take up the burden. Is water service required? The Portable Unit is ready to perform it. Wherever emergency or semi-permanent pumping is required, the Portable Pumping Unit is at hand to furnish it.

The immediate success and growing sales of the Portable Pumping Unit are the best indications of its usefulness.

May we send you further details?

GASO PUMP & BURNER MFG. CO.
Tulsa · Oklahoma

Capacities: 63 to 250 barrels at 800 to 275 pounds pressures; fully enclosed and self lubricating.

GASO PUMPS
for every oil industry need

When Oil Slips Through

What's the use of stopping leaks at the bung hole when the main spigot is open? Profits are oftentimes wasted in this drib drab fashion when a tight seating valve could be procured to halt the extravagance.

For the sake of economy "look into" the Darval Semi-Steel Gate Valve. A revelation is in store for you. You will find a perfectly balanced mechanism — as true and tight as a fine watch. The discs are independent of each other and independent of the wedges so they are free to revolve and change their positions on the seats each time the valve is closed, avoiding unequal wear.

Manufactured of Darval Semi-Steel, bronze mounted with ground seat faces. Also furnished with solid semi-steel seats made integral with body of valve. Either bronze or steel stem provided. For all pressures.

Dollars Go To Waste

DARLING VALVE & MFG. CO.

WILLIAMSPORT, PA.

New York · Chicago Oklahoma City Houston

Mid-Continent Distributors:
Frick-Reid Supply Co.
International Supply Co.
Atlas Supply Co.
Petroleum Supply Co.

California Distributor
Petroleum Equipment Company
Los Angeles

Illustration of Darval Semi-Steel Gate Valve. Darling Forged Steel Valves also available for high-pressure fields and other hazardous conditions.

DARLING
GATE VALVES

Chance is the enemy of safety in oil production.

The HALLIBURTON SAND TESTER

removes chance...Gives an accurate open-flow test...Tells where to set casings...Makes rotary drilling safe for any well.

Send coupon for full details.

ERLE P. HALLIBURTON CO.
Duncan, Okla.

ERLE P. HALLIBURTON, Duncan, Oklahoma
Without obligation, please send me full details of the Halliburton Sand Tester, together with prices.

Name.....
Street.....
City.....
State.....

It's a Wilson

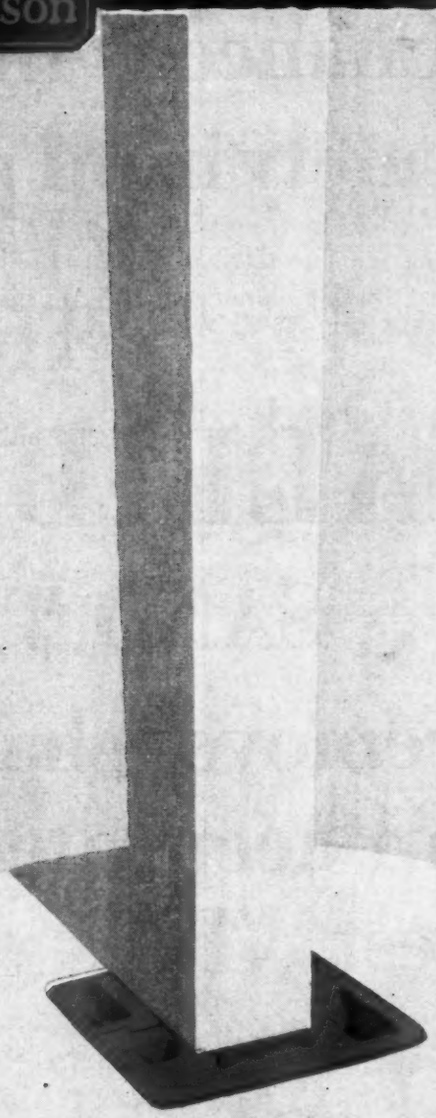
Give your kelly the right bushing

WILSON *Rotary Drive* Bushing.

[MANGANESE STEEL]

Wilson Oil Tools Corp.
DISTRIBUTORS FOR
Wilson & Willard Mfg. Co.
Factory and Manufacturer's Office: 1351 E. Vernon Ave
Los Angeles, Calif.

SALES REPRESENTATIVES
Tulsa, Okla., 409 Atlas Life Bldg.
Houston, Texas,
219 Post-Dispatch Bldg.
Abilene, Texas, 865 Grape St.
Ft. Worth, Texas,
812 Dan Waggoner Bldg.

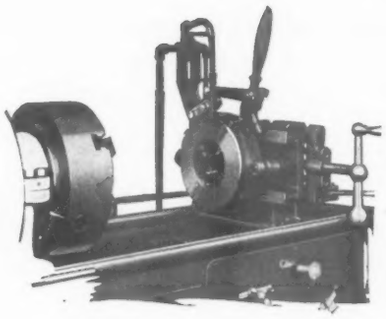


Made of manganese steel, providing a very hard metal with a tough grain composition that will not damage the Kelly and will retain its original shape during sustained drilling operations.

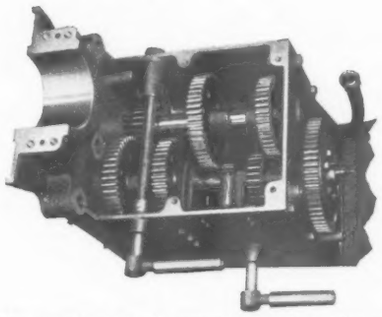
Light in weight, designed with strong reinforcement ribs that add greatly to the strength of the Bushing.

Top of Bushing is smooth, flush with rotary table. Can be operated bolted or unbolted.

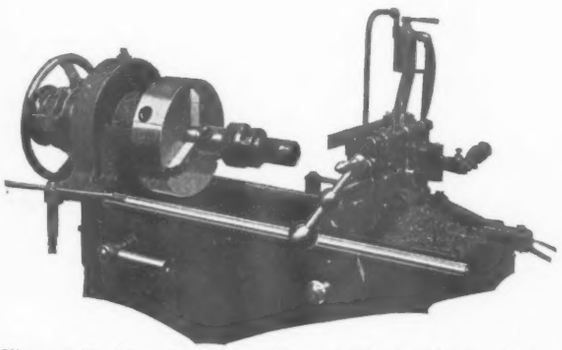
Carried in stock by your Supply Companies



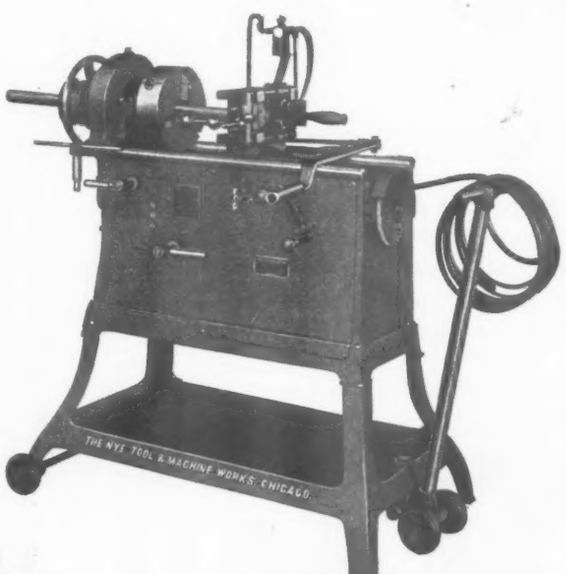
Quick Opening Die Head



Gear Case running in oil, assuring perfect lubrication



View of Machine showing position of Nipple Chuck, Cutting Off Tool and Reamer



CAPACITY: ¼ to 2 inches inclusive. With Universal Drive Shaft will operate stocks up to 12 inches
Note Grinding attachment—2600 R.P.M.

A Letter from Harry G. Nye

To the Oil Men of the U. S. A.:

Friends—

A fellow asked me the other day why I didn't carry a patent cigar lighter, and I told him I was disappointed often enough as it was. I am a machinery manufacturer myself, but I realize that nothing yet has been invented that is as simple and sure as pulling a match across the seat of your pants. Of course, now that women have taken up smoking, patent cigar lighters may be necessary.

But there seems to be no limit to our inventive genius. (I mean the human race, not merely the Nye Tool & Machine Works.) Man may yet invent a cigar lighter that works, and possibly even an office-boy. There is just as much opportunity for the inventor as there ever was. Of course, Edison invented the electric light, but now all some young man needs to do is to think up something better.

I was saying to a friend of mine, a radio fan, but nevertheless a friend, that the radio hadn't anything like reached perfection yet, and he said I was a liar, that he got Perfection nearly every night. He thought it was a station, and you know how touchy these radio fellows are. They won't admit there is anything they can't get. I know a man who smelled cigar smoke and thought he had Havana.

But this is the age of invention, or, anyway, a woman's age often is. And we must have radios that work both ways. What we need is a loud speaker that can talk back. I mean one besides the one we married. When an announcer murders the English language, there ought to be some way to do it to him. When he floods the house with jazz, there ought to be some way to flood the studio with poison gas.

The radio isn't perfect yet. And I didn't think the automobile was, until I read an automobile ad. I had begun to wonder what had become of the old boys who used to write the circus posters. But here they are, with us again, writing the automobile ads. But even the automobile could be improved. What we need is a car that will turn right when the driver signals for a righthand turn.

Then there is the aeroplane. Something ought to be done about that as soon as the patent cigar lighter is perfected. We must have more and better aeroplanes. We will have to have somewhere to go after Henry lets loose a couple of million more Fords. There won't be any place left for us on earth. There isn't now, and it will be worse then.

In fact, about the only thing that doesn't seem to need improving is Nye Tools. They are just about perfection, they work so fast and so easy, and last so long. They are as far ahead of the old-fashioned kind that some fellows still use as an aeroplane is ahead of a wheelbarrow. They make pipe-cutting a snap.

Yours as usual,

HARRY G. NYE.

Otherwise Known As

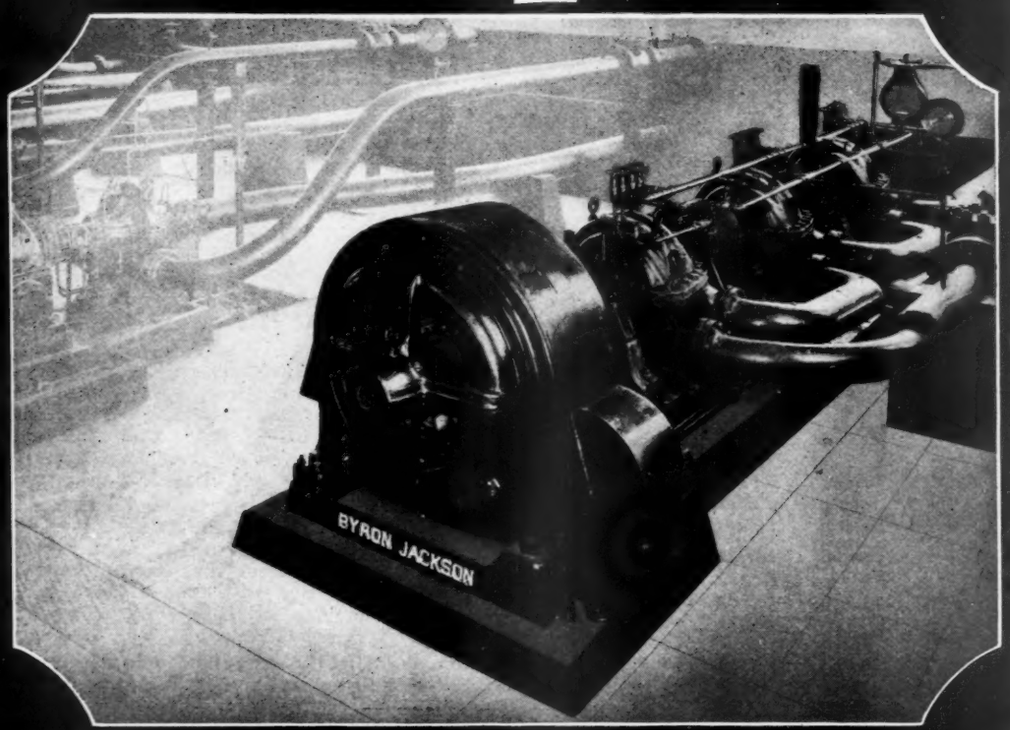
(Copyright, 1928, by Harry G. Nye. All rights reserved)

Universal Shaft operating stocks up to 12 inches

THE NYE TOOL AND MACHINE WORKS

4120-30 Fullerton Avenue Chicago, Ill.

High Pressure Centrifugal Pumping



Oil companies have found many advantages in the use of Byron Jackson centrifugal pumps for pipe line pumping. Among the most important is automatic control of long pipe lines from the initial station, booster stations being completely automatic. This is only possible with centrifugals. Byron Jackson line pumps have been tested in the field and their superiority proven.

BYRON JACKSON PUMP MFG. CO.
Factories: BERKELEY, Los Angeles, Visalia
Branches: San Francisco, Portland, Salt Lake, Dallas, Phoenix

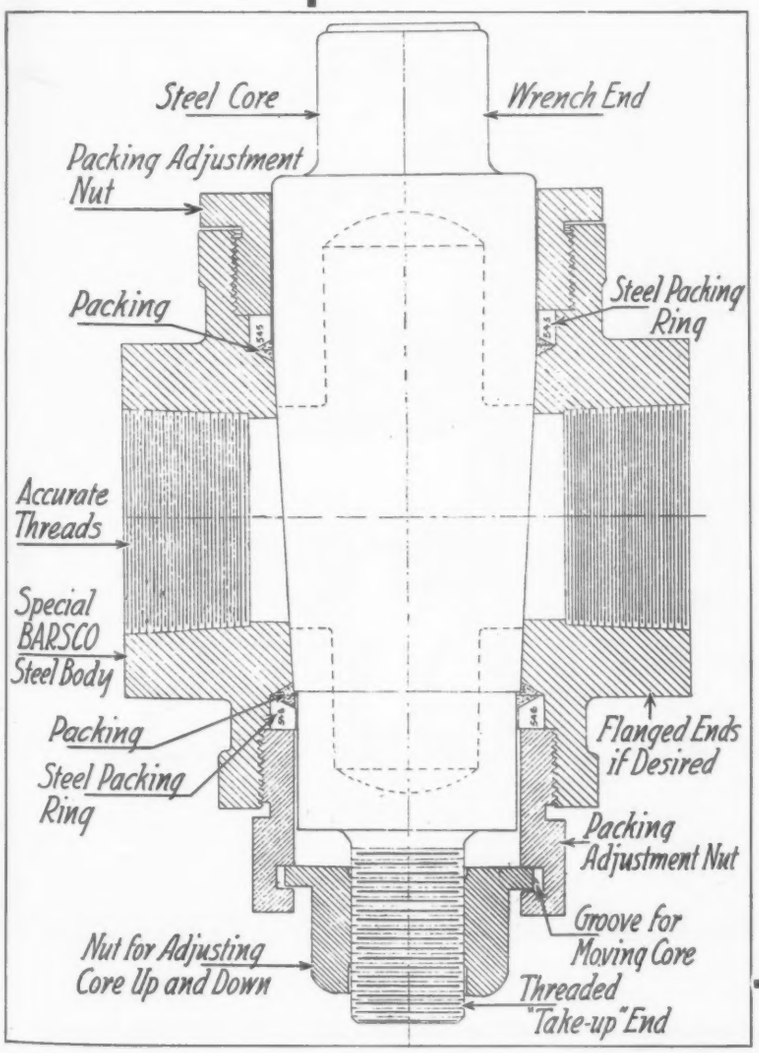
BYRON JACKSON
CENTRIFUGAL PUMPS FOR EVERY SERVICE

Patented

BARSCO
Hydraulic Stop Cock

This is the "stop cock" that the oil field has long wanted. It has a longer life—requires no replacement of parts and can be kept in service longer than other types of plug valves. Ordinary valves or stop cocks seldom last throughout one installation—while in comparison and on an actual service test several BARSCO stop cocks have been put in use and reused on up to six well installations and are still in steady service at this writing.

Here are a few important BARSCO features.



(1)—Adapted for steam, water, gas, oil or air and especially for Rotary Slush Pumps.

(2)—Made in sizes of 1¼", 1½", 2", 2½", 3" and 4".

(3)—No grease to collect dirt, form scale or cause sticking.

(4)—Specially designed packing in both ends.

(5)—Fifteen (15) ton lift on core, 14" wrench, positive operation—no hammering.

(6)—One quarter turn of wrench to open and close.

(7)—Core (or plug) can't break or stick.

(8)—Made of special "BARSCO" steel—indestructible.

(9)—Pressure—2000 lbs., safety factor to meet all requirements.

(10)—Can be packed under pressure, open or closed.

(11)—Original installation only—no removal for upkeep.

BARTLESVILLE SUPPLY COMPANY of MISSOURI

Factory and General Office:
3400 Maury Avenue, St. Louis, Mo.

Oklahoma Office—J. H. Kountz, 218 East Brady St., Tulsa, Oklahoma

Texas Office—J. G. Lockard—504 Western Ave., Amarillo, Texas

Export Office—150 Broadway, New York City

Other BARSCO products you should know about

Drive Shoes
Casing Shoes (all patterns)
Steel Nipples
Anchor Clamps
Gas Packing Clamps
Shoe Guides
Rotary Tool Joints
Casing Clamps
Rubber Swabs

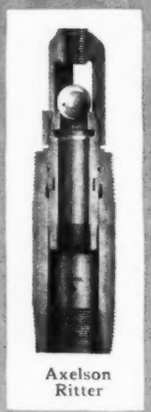
Write for details and prices—today.

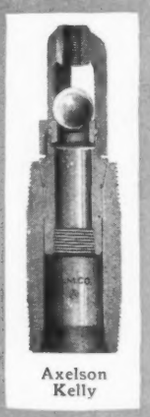
Axelson E-Z Pull

Axelson Babbitt Packed

Axelson Steel Packed

Axelson Super-Size


Axelson Ritter


Axelson Kelly

THE 6 *Leading Standing Valves for* OIL WELL PUMPS

In the various combinations of Oil Well Pumps produced by Axelson wide lattitude is allowed in the selection of Standing Valves. Here are the six outstanding Valves—the Leaders in pumping fields:

The E-Z Pull, our latest type, provides Cage and Body in one piece, with no recess between, so that when the Valve is lifted, the tapered surface lifts easily. It seats in action; lifts when pulled. Sand can't freeze it. All steel.

The five other Axelson Standing Valves illustrated are types that are well known in the field. A request will bring to you new literature.

. . . all are Axelson's

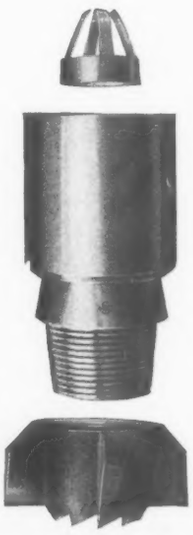
THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON MACHINE COMPANY
P. O. BOX 337, LOS ANGELES. TULSA, ST. LOUIS, NEW YORK CITY
Mid-Continent Distributors—Frick-Reid Supply Co.
Eastern Distributors—Frick & Lindsay Co.

9, 1928

Announcing the new SMITH Core Barrel Type "C"

(Formerly Phipps Core Barrel)



The Type "C" Smith Core Barrel (formerly Phipps).

The new two-piece Type "C" Smith Core Barrel (Formerly Phipps) is destined to take its place as one of the outstanding improvements in coring tools. The bit has been specially designed to accommodate modern hard facings such as Borium, Stellite, Stoodite or other similar metals or alloys. Made of high-carbon forged steel, it allows more hole clearance; and is much lighter and less expensive.

A novelty in construction is the placing of the core catcher in the bit sub instead of in the head or cutter as in our Types "A" and "B". Circulation is unusually close to the teeth, allowing perfect, positive washing.

The renewable heads may be economically thrown away after drilling, rather than rebuilt.

Simple in construction; equally simple in use—and we guarantee the Type "C" to take perfect cores in any formation penetrated by a fishtail or disc.

Write for the special booklet describing the Type "C" and other Smith Core Barrels in detail.

Renewable cutter head.

H. C. SMITH MANUFACTURING CO., Inc.

Whittier, California

Branch Offices and Warehouses

Taft, Calif. Ventura, Calif. Bakersfield, Calif.

Harry B. Shine, Sales Agent,
2408 McKinney Ave., Houston, Texas

Note rough surface of wrought iron which soaks up the zinc and holds it in a vise-like grip, so that the coating won't flake or peel off.

Note relatively smooth surface of steel, giving such poor anchorage for zinc that it flakes and peels off in handling and wear.

Facts you should know about Galvanized Tubing

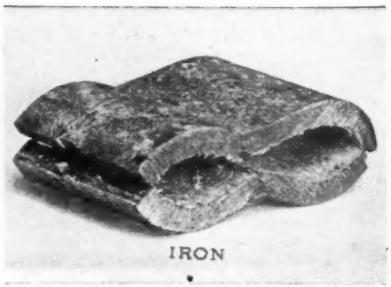
Byers galvanized tubing as well as other pipe in recent tests has shown remarkably long life where other galvanized pipe has rusted out in a short time. The difference in favor of Byers is so marked (from 10 to 20 times longer life) as to call for explanations.

Zinc is such a brittle material that it has never been successfully used alone where strength and light weight are required. Even when applied on a steel base (as in galvanized pipe) its brittleness is so pronounced that the coating will chip or flake off with cutting, threading, screwing up, etc., and where subject to wear.

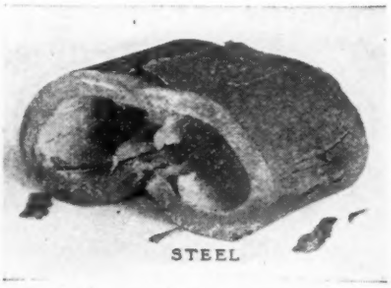
Zinc Sticks to Byers

When applied on Byers Pipe, the rough surface of the pipe metal holds the zinc in a vise-like grip which prevents it from peeling off.

CORROSION TEST
If you have corrosion trouble anywhere, write us. A corrosion test is easily arranged, and may save you big money in future operations.



Byers galvanized pipe hammered flat, without showing tendency of coating to flake or peel off.



Steel pipe submitted to same test as shown above. Note how galvanizing comes off in big flakes.

No metal except genuine wrought iron has this rough surface. So-called "iron pipe," sold under various names, does not have it, being in fact only steel of low carbon analysis made in open hearth furnaces.

Make this Easy Test!

Cut off two pieces of galvanized pipe, from one to two inches long, one of them Byers, the other steel. Note how the galvanizing flakes off the steel from the end where cut. Then crush both pieces flat with a hammer, and see what happens to the galvanizing! It peels off the steel in big flakes, but sticks to wrought iron like glue.

A. M. BYERS COMPANY
Established 1864 Pittsburgh, Pa.
Distributors
Jarecki Mfg. Co. **Oil Well Supply Co.**
Norvell-Wilder Hardware Co.

BYERS GALVANIZED Tubing

GENUINE WROUGHT IRON

Say you saw it in The OIL WEEKLY

Your money's worth in wear!

DOLLAR for DOLLAR and hour for hour, you'll find, if you don't already know it, that D & B Heatreat Sucker Rods are worth more. Their tensile strength, due to D & B heat treating, is in excess of 112,000 pounds per square inch, against approximately 90,000 pounds for untreated steel.

They're built to stand hard wear and a little more—and they'll outlast any other rod on any job, regardless of punishment!

D&B PUMP and SUPPLY Co.
LOS ANGELES, CALIF. DALLAS, TEXAS.
BRANCH STORES.
TORRANCE, TAFT, COALINGA, BAKERSFIELD, SIGNAL HILL, HUNTINGTON BEACH & SANTA FE SPRINGS, CALIFORNIA.

D+B API Specification Heatreat Sucker Rods

a hundred and twelve thousand pounds per square inch

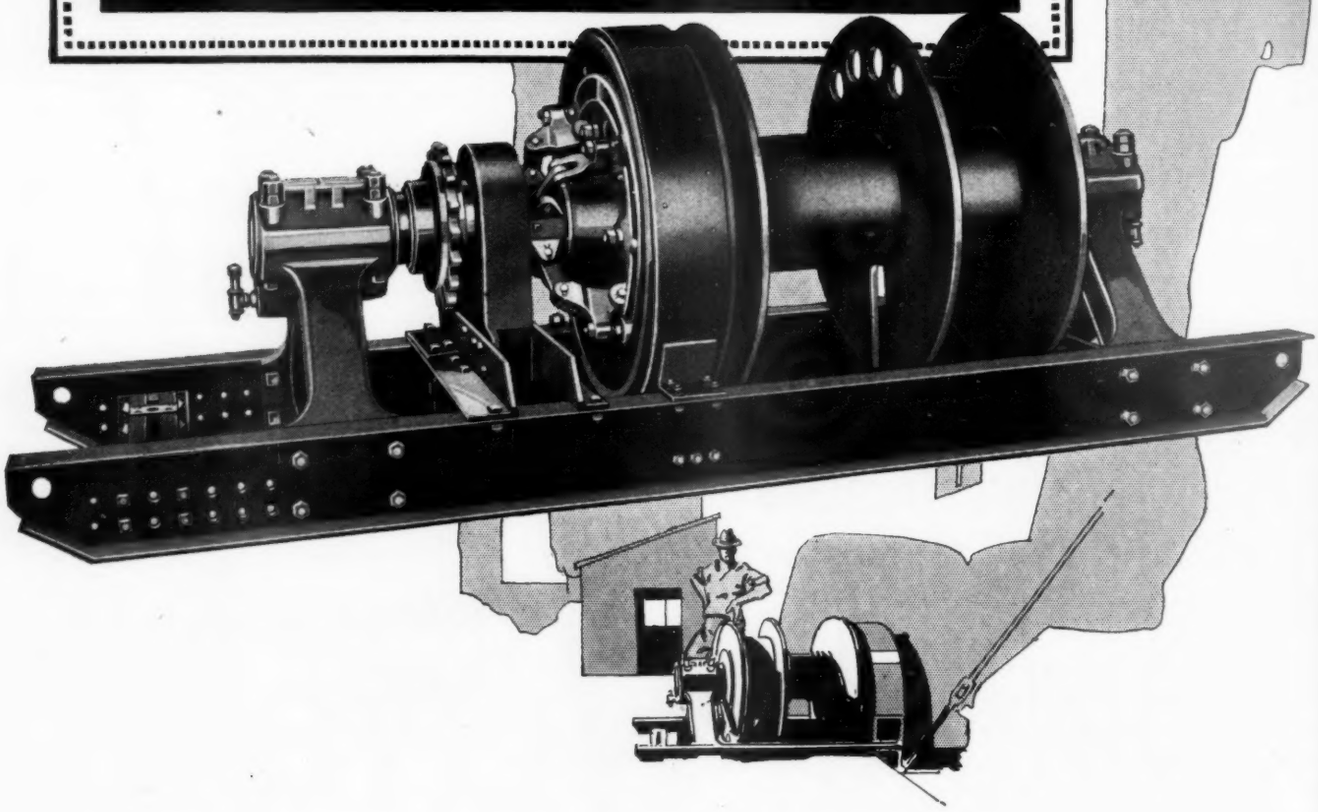
instead of ninety

NATIONAL CHAIN DRIVEN SAND REEL

TYPE "J"

DESCRIPTIVE BULLETIN No. – 18 N ON REQUEST

THE NATIONAL SUPPLY COMPANIES



Say you saw it in The OIL WEEKLY

Hercules

O.K.

It is a badge of merit—this Hercules O.K. It is given only to an engine that has shown the exceptional performance required in the Hercules tests.

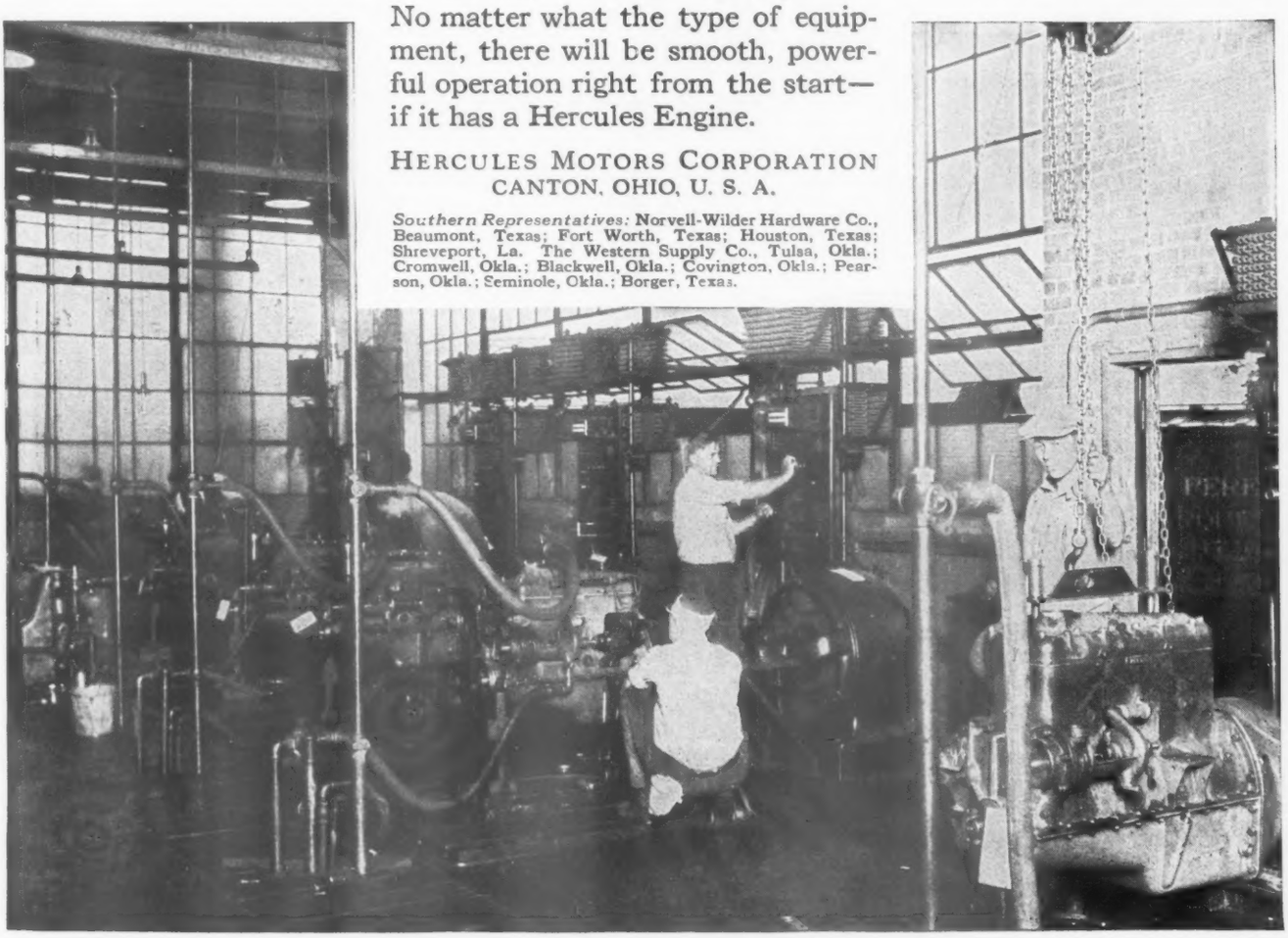
Every Hercules Engine gets these tests. The dynamometer unfailingly records the individual ability of each Engine. So, the engine with the Hercules O.K. is ready to do a full day's work at full capacity. It will keep up this profitable work for long periods with only ordinary care.

Farmers, road builders, general contractors and commercial transportation men know the long-lived economy of Hercules Engines.

No matter what the type of equipment, there will be smooth, powerful operation right from the start—if it has a Hercules Engine.

HERCULES MOTORS CORPORATION
CANTON, OHIO, U. S. A.

Southern Representatives: Norvell-Wilder Hardware Co., Beaumont, Texas; Fort Worth, Texas; Houston, Texas; Shreveport, La. The Western Supply Co., Tulsa, Okla.; Cromwell, Okla.; Blackwell, Okla.; Covington, Okla.; Pearson, Okla.; Seminole, Okla.; Borger, Texas.



Say you saw it in The OIL WEEKLY

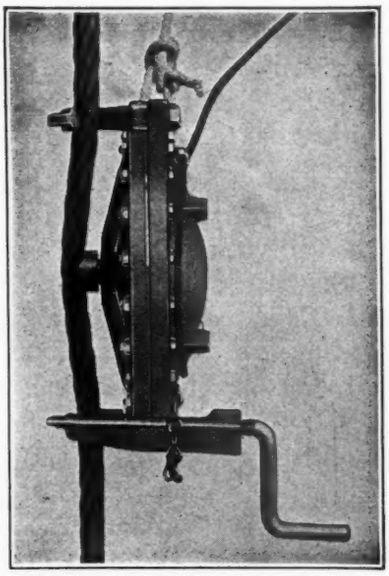
Martin-Loomis
Automatic
Recording Weight Indicator

No Moving Parts

No Wear

Extreme Simplicity

Maximum Accuracy



Bronze Case Containing Rubber Diaphragm Attached to Dead Line

All Bronze

Easily Installed

Fool Proof

Internationally Used

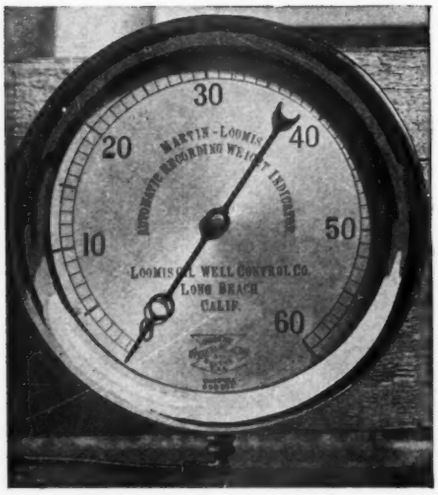
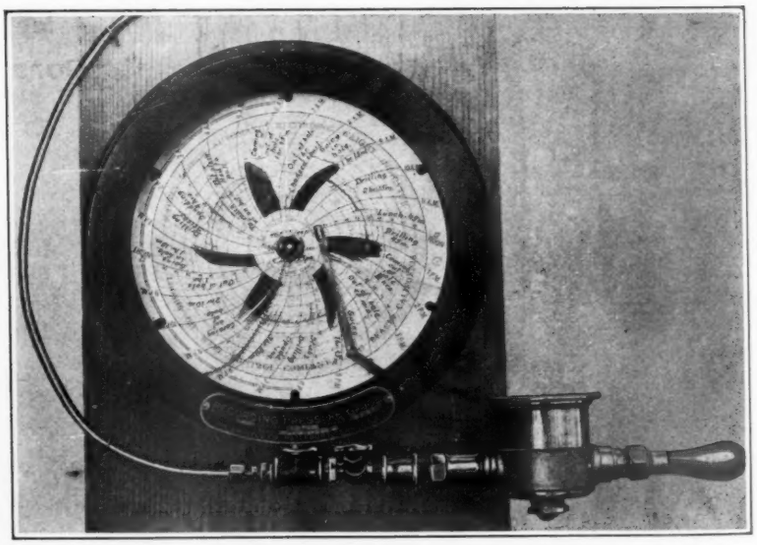


Fig. 3—Gauge used in conjunction with weight indicator placed in easy view of the driller



Showing details of 24-hour day drilling record as recorded through weight indicator

MARTIN-LOOMIS CORPORATION

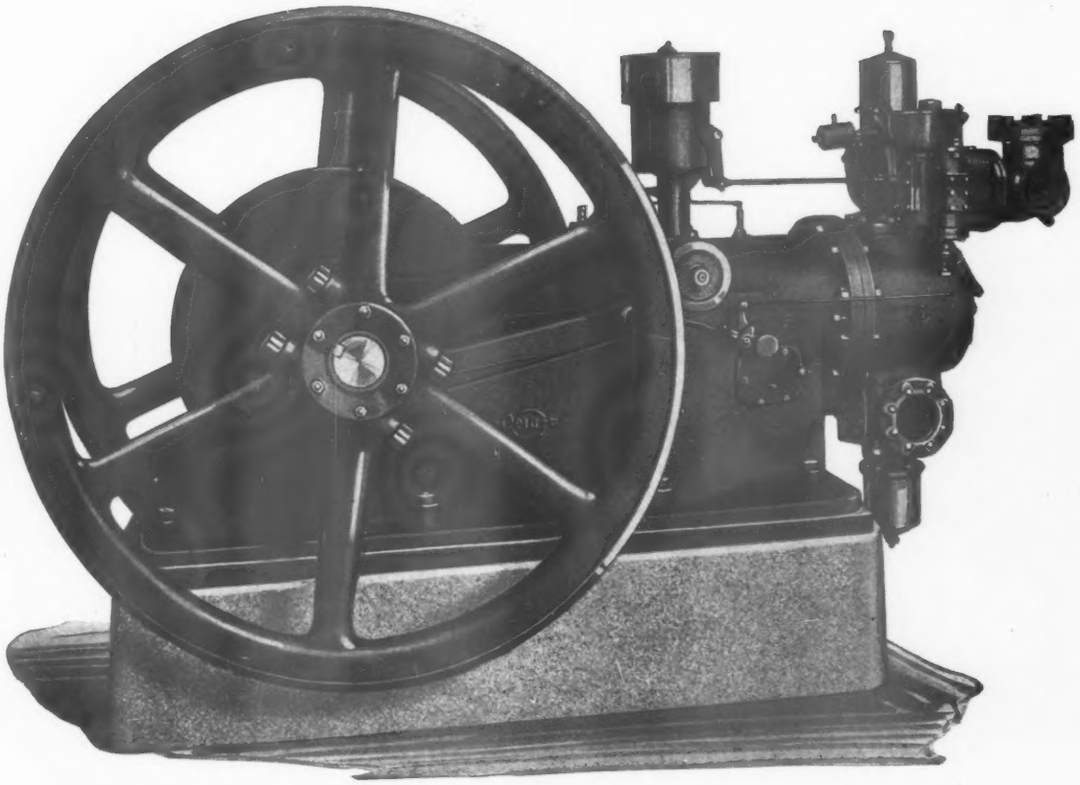
568 East Willow Street **Long Beach, Calif., U. S. A.**

Export Representatives
OIL WELL SUPPLY COMPANY

Mid-Continent Representatives
REED ROLLER BIT CO., HOUSTON, TEXAS

Say you saw it in The OIL WEEKLY

POWER



REID 4 CYCLE GAS ENGINES

JOSEPH REID GAS ENGINE CO.

OIL CITY, PENNSYLVANIA, U. S. A.

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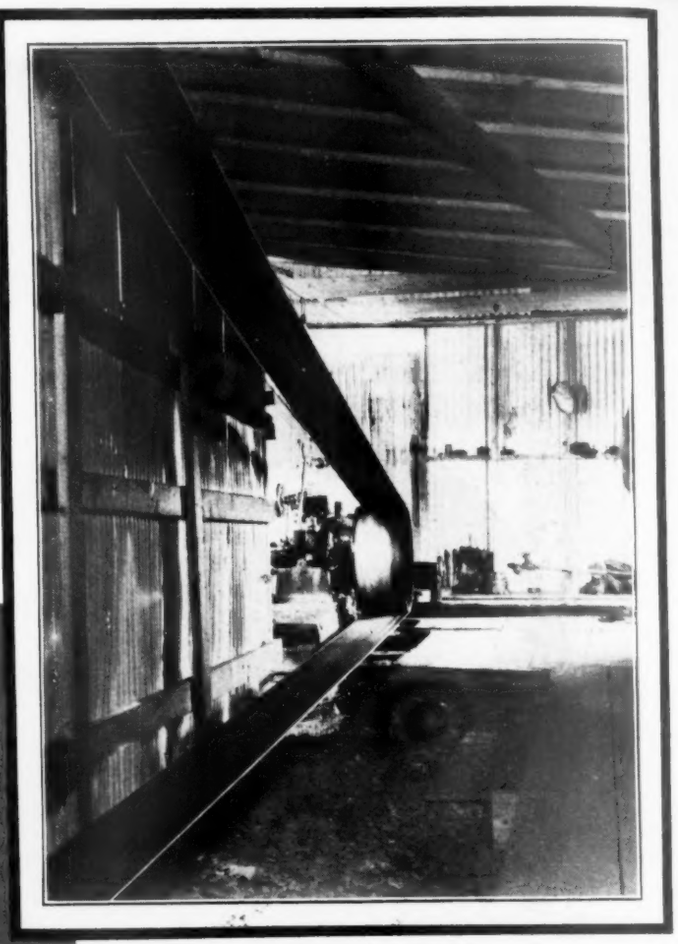

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INDEX OF ADVERTISERS

Acme Fishing Tool Co. .:2nd cover
Abercrombie, J. S., Co. .....
Ajax Iron Works 52-53
Alco Oil Tool Co. .....
Allis-Chalmers Mfg. Co. .....
Alten's Foundry & Mach. Wks. 84
Aluminum Co. of America .....
American Cable Company .....
American Iron & Mach. Wks. ..
American Roller Bearing Co. ..
American Seamless Tube Corp...
American Telegraph & Telephone Company .....
American Well Works .....
Andrews Steel Company 105
Arbon, Paul & Company .....
Athey Truss Wheel Company ...
Axelson Machine Co. 10

B. & A. Specialty Company .....
Baash-Ross Tool Company .....
Baker Casing Shoe Company 20
Barber-Greene Company .....
Barnickel, William S. & Co. 98
Bartlesville Supply Company 9
Beebe Brothers .....
Bellevue Stratford Hotel 98
Bovaird Supply Company .....
Bessemer Gas Engine Co. .....
Broderick & Bascom Rope Co. ...
Buckeye Traction Ditcher Co. ..103
Buda Company .....
Butler Manufacturing Co. .....
Byers, A. M., Company 12

Cameron Iron Works .....
Carey, Phillip, Company .....
Chain Belt Company 99
Chicago Bridge & Iron Works ..
Chicago Pneumatic Tool Co. ....
Clark Brothers Company 63
Climax Engineering Company ... 77
Continental Supply Company ..18-59
Cooper, Fred E. .....
Crescent Belt Fastner Co. .....
Cyclone Fence Company .....

D. & B. Pump & Supply Co. 13
D. & M. Machine Works .....
Darling Valve & Mfg. Co. 4
Dart, E. M., Mfg. Co. 78
Diamond Drill Carbon Co. 102
Dunn Mfg. Co. ...4th cover and 104

Eastern Torpedo of Ohio Co. ...
Economy Pump Company .....
Edwards, E. H., Mfg. Co. .....
Elliott Core Drilling Co. .....
Emsco Derrick & Equipm't Co. ..

Fenwick-Reddaway Mfg. Co. ....
Fort Worth Laboratories 98
Franklin Valveless Engine Co. .. 55
Frick-Reid Supply Co. 83
Fuller Mach. & Forge Wks. .....

Gardner-Denver Company .....
Gaso Pump & Burner Mfg. Co. .. 3
General Electric Company 81
Gott, H. P., Mfg. Co. .....
Goulds Pumps, Inc. .....
Grant Oil Tool Company .....
Gray Tool Company 88
Great Northern Hotel 88
Greenspons, Jos., Iron & Steel Company .....
Guiberson Corporation 73
Gulf Refining Company 106
Gulf States Utilities Co. .....
Halliburton Oil Well Cementing Company .....

Halliburton, Earl P., Co. 5
Hardway & Cathey 98
Haynes Stellite Company .....
Harrisburg Pipe & Pipe Bending Company .....3d Cover
Harrisburg Pipe & Pipe Bending Company of Texas 76
Heppenstall Forge & Knife Co. .. 85
Hercules Motors Corporation ... 15
Hercules Tool Company .....
Heydrick Mapping Company 98
Hinderliter Tool Company .....
Hirsch & Brown 98
Hopkins, Edwin B. 98
Hough, Charles N. Mfg. Co., ... 76
Houston Ready-Cut House Co. .. 82
Hughes Tool Company ..Front cover
Humble Oil & Refining Co. .....
Hyatt Roller Bearing Co. .....

Imperial Royalties Company .....
Institute of Applied Geophysics ..
International Derrick & Equipment Company 22
International Supply Co. .....

Jackson Pump Co., Byron 8
Jarecki Mfg. Company .....
Jensen Bros. Mfg. Company .....
Jones, The S. M., Co. 82
Jones Oil Well Reamer Co. .....

Kansas City Hay Press Co. 84
Kennedye Plumb Corp. 86
Kerotest Manufacturing Co. ....
Keystone Pipe & Supply Co. 102

Landis Machine Company .....
Larkin & Company .....
Layne & Bowler Co., The 66
LeBus Rotary Tool Works .....
Lorraine Corporation .....
Lubrikup Company .....
Lucey Manufacturing Corp. .....
Ludlow Valve Mfg. Co. 71
Lufkin Foundry & Mach Co. ...

MacClatchie Mfg. Co. .....
Maloney Tank Mfg. Co. 89
Manzel Brothers Company .....
Martin-Loomis Corporation 16
Martin Wagon Company 87
Maverick, Phillip 98
May, H. B., Mfg. Co. .....
McEvoy, J. H. & Company .....
Metric Metal Works .....
Miller Company, Robert J. 90
Mission Sales Company .....
Moore, Lee C., & Company 45

National Petroleum Engineering Company 80
National Pigments & Chemical Company .....
National Supply Companies 14
National Tube Company .....
New York Rubber Co. .....
Norris Bros., Inc. .....
Norvell-Wilder Hardware Co. ...
Nuttall, R. D., Company 91
Nye Tool & Machine Works ... 7

O'Brien Steel Constr. Co. .....
Oil City Iron Works (Shreveport) .....
Oil Country Specialties Co. .....
Oil Well Supply Company 51
Osage Agency 103

Parkersburg Rig & Reel Co. ....
Pattin Bros. Company .....

Peden Iron & Steel Co. 80
Penberthy Injector Company ....
Petroleum Engineering Institute..
Petroleum Rectifying Co. 61
Philadelphia Gear Works .....
Pittsburgh Equitable Meter Co. ..
Pittsburgh Steel Products Co. ..
President Hotel 105
Price, W. A. .....

Reading Iron Company .....
Reed Roller Bit Company .....
Regan Forge & Engineering Company .....
Reid, Joseph, Gas Engine Co... 17
Republic Iron & Steel Co. 69
Republic Supply Company 75
R. F. Electrical Company .....
Rollway Bearing Company .....
Rotary Supply Company .....

Safety Pulling Machine Co. .....
Shaffer, J. E., Company .....
Shaffer Specialty Company .....
Schaffer Tool Works .....
Sheffield Steel Corporation 87
Shine, Harry B. .....
Sinclair Refining Company .....
S. K. F. Industries .....
Smith, A. O., Corporation 43
Smith, H. C., Mfg. Co. 11
Smith Separator Company 85
Smith, Howard Company 80
South Chester Tube Co. .....
Spang & Company .....
Southern Engine & Pump Co. ...
Star Drilling Mach. Co., The.... 79
Standard Seamless Tube Co. ...
Stanley Belting Corporation 105
Stoody Company .....
Stone, Jesse R. 98
Sullivan Machinery Company ...

Templeton Kenly & Co. 86
Texas Company, The .....
Texas Creosoting Company .....
Texas Cyclone Fence Co. .....
Texas P'r & L't Co. .....
Texas Rubber Specialty Co. .....
Timken Roller Bearing Co. .....
Titusville Iron Works .....
Traction Machine Company .....
Trimont Manufacturing Co. .....
Trumble Gas Trap Company .....
Twin Disc Clutch Company .....
Tyler Tube & Pipe Co., The 105

United Iron Works .....
United States Torpedo Co. 102
U. S. Tool Co. .....

Waukesha Motor Company 100
Webster, C. W. 82
Weinzierl, John F. 98
Westinghouse Electric & Mfg. Company .....
Westcott & Greis .....
Western Metal Mfg. Co. 78
West Texas Utilities Co. 65
Wickwire-Spencer Steel Co. 103
Wico Electric Company .....
Wheeling Steel Corporation ....
Williams, J. H., & Company .....
Williamsport Wire Rope Co. ...
Wilson Oil Tools Corp. 6
Wilson-Snyder Mfg. Co. .....

Yale & Towne Mfg. Co. .....
Young Engine Corporation .....

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TABLE OF CONTENTS

Features

HIGH GRADE CRUDE IN GOOD DEMAND IN MID-CONTINENT 23
By Kent Ridley

TEN YEARS' APPLICATION OF AIR AT HAMILTON CORNERS 27
By Charles R. Fettke

RECOVERY FROM UNCONSOLIDATED SANDS BY WATER FLOODING 32
By L. C. Uren and E. H. Fahmy

SEMINOLE DEVELOPMENT ACTIVITY DECLINE CHECKED 35
By Wallace Davis

LOST SPRINGS DEVELOPMENT ASSUMES BOOM PROPORTIONS 38
By Wallace Davis

HENDRICK EXTENSION STARTS BIG OFFSET CAMPAIGN 40
By H. H. King

WILDCAT STRIKE STIMULATES WORK IN NORTH TEXAS 44

FINAL TEST SHOWS CARTERVILLE WELL ALL WET 48

LONG BEACH MAKING GOOD ON PRODUCTION THREAT 49
By Brad Mills

MILE EXTENSION REVIVES WORK AT SOUTH LIBERTY 56
By Jack Logan

Departments

UNITED STATES PRODUCTION—A. P. I. FIGURES 58
COMPLETIONS FOR THE PAST WEEK IN ALL U. S. FIELDS 64
PERMITS GRANTED FOR NEW WELLS DURING THE PAST WEEK 68
WILDCAT DRILLING REPORTS FROM ALL IMPORTANT AREAS 72
NEW EQUIPMENT, CATALOGS, BULLETINS AND BOOKS 101
SQUEAKS FROM THE BULL WHEEL 104
CRUDE OIL PRICE QUOTATIONS 60
IMPORTS AT PRINCIPAL PORTS 62
RECEIPTS OF CALIFORNIA OIL 62
PERSONAL MENTION 37

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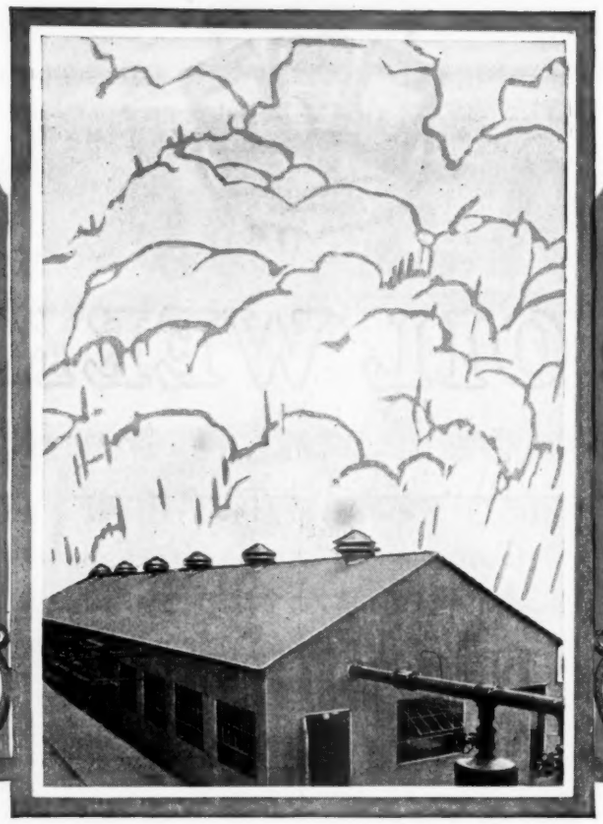

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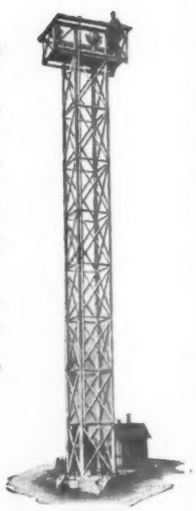

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High Grade Crude in Good Demand In Mid-Continent

Pipe line companies actively after connections since late advance on higher gravities, while West Texas oil goes begging

By KENT RIDLEY

INCREASES in Texas and the Gulf Coast gave production a slight increase during the week ending March 3, the principal contributor being Winkler County, with a gain of 10,000 barrels in daily average. Oklahoma was down 4750 barrels, the total change for the United States being 7600 barrels.

Firmness in the crude market is reflected in active demand for crude in all sections except the sulphur contaminated oils of West Texas, this situation becoming more pronounced since the recent advance in posted prices on the top grades. West Texas for the time seems to be damaging only its own hopes in its continual threat of still more surplus production, although its influence is naturally detrimental to hoped-for advances in prices generally. Movements are on foot to stop development at the present rate in Texas, the State commission taking action based upon the need of conservation through curtailment for the benefit of both the oil industry and the State, which is a large royalty owner in the most prolific producing areas.

Solicitation of new crude connections in old fields and new pools throughout North and Central Texas is now being practiced by all the major pipe line companies. This policy has been in evidence for the past few months, but requests for new connections have been particularly sought since the upward revision of posted prices on the higher gravity "sweet" oils last month.

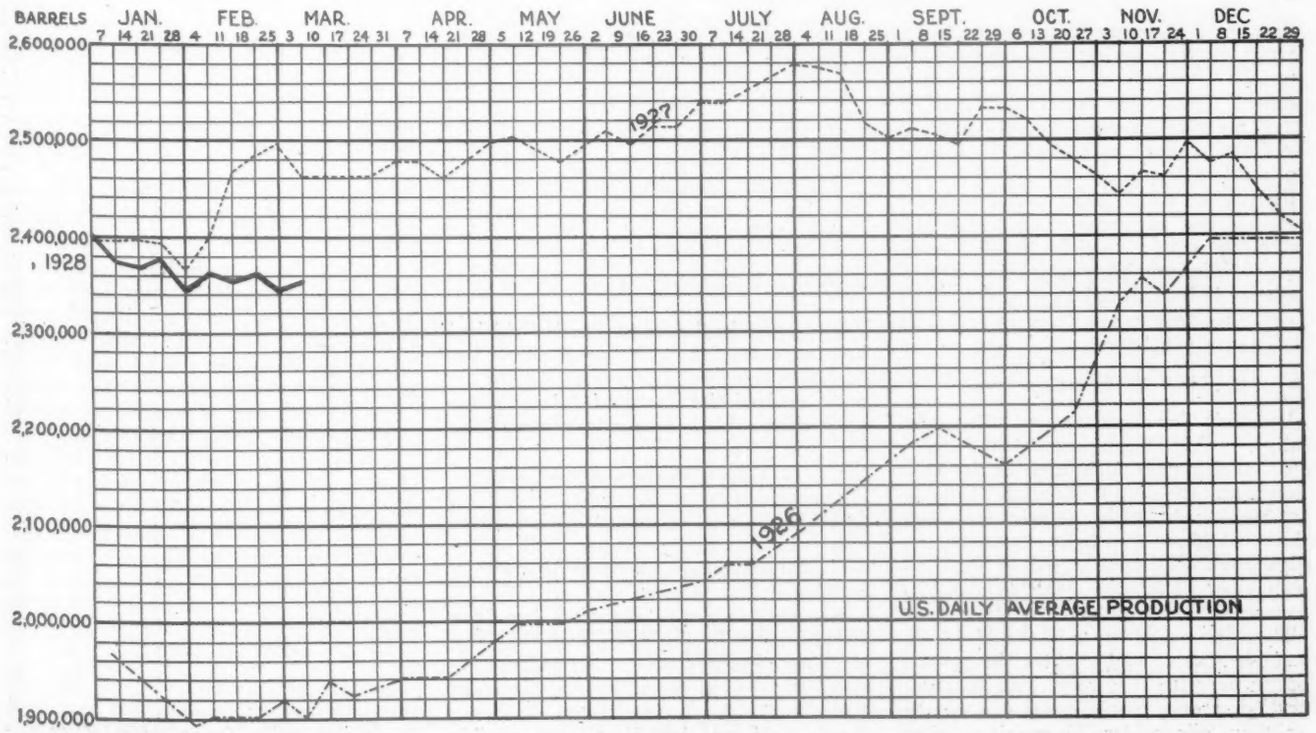
Texas Pipe Line Company and Pure Oil Pipe Line Company (Prairie) are setting the pace in going after additional crude supplies in North Texas, while Gulf Pipe Line Company has also displayed fresh interest in buying outside oil conveniently located to its gathering system in this district.

The recent opening of a prolific shallow pool in north Young County was followed immediately, Texas and Pure starting work on extension lines to the field.

A substantial premium probably would be quoted on spot oil in the North Texas district, owing to the campaign being waged by the major pipe line companies for connections, but local refiners are being served with their crude requirements by Prairie Oil and Gas Company, making deliveries via the Pure line at a dime per barrel marketing charge above the posted price and usual pipe line tariff.

High gravity oil producing fields and pools in Central West Texas are likewise being covered by crude solicitors of the major pipe line companies, and recent shallow pool discoveries made in Brown, Coleman and Shackelford Counties have gained pipe line connections promptly. Texas, Prairie and Humble are the most active solicitors of new connections in this district, while Sinclair is taking on every barrel

UNITED STATES CRUDE PRODUCTION TREND



Details of United States Production Estimates, Page 58

DETAILS ON CRITICAL FIELDS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	No. Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	85	294,245	3,462	92	122,195	1,328*	25	97
Church & Fields	181	201,110	1,111	179	59,525	333	1	1
Gulf-McElroy	58	51,605	889	58	17,535	302	1	1
Yates	168	1,067,390	6,354	168	48,205	287*	8	23
Totals	492	1,614,350	3,281	497	247,460	498	35	122
TEXAS PANHANDLE—								
Hutchinson County	1,094	544,620	498	978	46,095	48	8	14
Gray County	196	82,125	419	182	18,450	101	12	63
Carson County	177	58,695	332	149	7,185	48	4	4
Wheeler County	42	14,230	339	33	980	30	3	8
Totals	1,509	699,670	464	1,342	72,710	54	27	89
OKLAHOMA—								
Seminole	1,271	1,560,591	1,227	1,087	305,320	280	21	67

*Production partially pinched.

available within reasonable reach of its gathering lines.

In contrast to the popular demand enjoyed by "sweet" crude in North and Central Texas district, the sulphur contaminated crudes in West Texas are literally going begging, particularly in the Hendrick field, at the flat posted price of 60 cents per barrel. Hendrick field is the only section in West Texas that distressed price crude is being marketed, and a few operators in this flush area are offering any quantities of crude desired daily at 60 and 65 cents per barrel loaded in buyers cars at racks in Ward County. One independent producer in this field has arranged with Magnolia Petroleum Company to gather and store in the latter's field tankage up to 2,000,000 barrels of crude to be kept until a fair price can be had for the oil, and Magnolia is to receive one-half of the oil handled on this contract. The cost per barrel for large tankage erected and ready to serve is considerably more than one-half the present market price on a barrel of Hendrick field crude.

Osage Oil Corporation, Tulsa, is reported to be making arrangement to have 3000 barrels of Yates field crude handled daily from its Halff lease, located on the Crockett County side of the field, to tank car rack on the Orient Railroad at McCamey or Hurdle by the Illinois Pipe Line Company. The latter concern has an eight- and a six-inch extending from the field to McCamey and Hurdle, and only a portion of the capacity is being used by Humble. The tariff on crude moved via this line is 12½ cents per barrel.

Demand in Mid-Continent

Demands for high gravity oils, especially of crude ranging around 40 degrees, is evidencing growth throughout the Mid-Continent, and it is generally believed that another change in the price structure, which would cater to light oils, would result from a continued decline in Seminole production. The price revision made by Carter Oil Company two weeks ago and followed by every buyer in the Mid-Continent is seen to truly reflect the general feeling over this territory, with demands for high gravity crude being stronger by far than oils under 36 gravity, below which the change served to cut rather than raise. The major force bringing about this condition of betterment to high gravity stuff is the decline of more than 220,000 barrels in Seminole production in seven months, and a continuation of this decline would no doubt continue to strengthen the market to the point a few steps further toward raises.

The revival of drilling south of Little River is bidding to check the decline before the end of the spring, while two wildcat producers in this area, opened March 1, have already served to check the decline for the past week. The potentialities of the area may be seen smaller than now anticipated, however, when new wells starting, reach the sands, and in such a case another probable hazard would be eliminated from Seminole.

The refined market in the Mid-Continent has shown no change during the past week, but recent changes for the better in spots go to indicate that much of the cheap gasoline is off the market.

California

The impending expiration of many gasoline contracts is casting a slight shadow over the market situation in California. While it is not expected that the disastrous price war of last year will be re-enacted, some friction is sure to result from the new contracts. The differential last year was a bone of contention and will come in for much discussion this season. The radical reduction last year was partially precipitated by a variance of views concerning the tank wagon-filling station differential. The gasoline market is in a healthy condition and the volume is slightly above the consumption of last year.

The spurt in the Long Beach field had been expected for more than a month, but the three large wells completed during the week revived the dread of a huge overproduction which is sure to come within the next three months. The situation in the field is undoubtedly the most disturbing market factor at the present time. Apparently there is no way to bring about a sane conservation program. All operators are striving to complete their wells in the quickest possible time.

A general wave of optimism has been brought about by the progress made along the lines of conservation. No definite action has yet been taken, but it is believed that the flood of crude from the Long Beach field may be offset by a sensible curtailment program.

Only a slight improvement has been noted in the fuel oil market. Keen competition from the Gulf Coast and Venezuela fields has been felt. The Pacific domestic and foreign demand is fair, with prices unchanged.

The general change in crude price in the East and Mid-Continent did not effect the California situation. Due to the lower gravity of California crude, prices would have been reduced had a similar schedule been carried out. No immediate change is anticipated, since the curtailment planned will just about offset the increased production expected.

Atlantic Increasing West Texas Line Capacity

Dallas, Texas—Atlantic Pipe Line Company's 10-inch stub line extending from the Hendrick field, West Texas district, to tank farm at Midland, a distance of about 71 miles, is to be increased to a maximum capacity of 45,000 barrels daily by the addition of two more intermediate stations. This line is owned by the Atlantic Oil Producing Company, a major producer in the Hendrick field, and is also handling oil produced and purchased by Magnolia and a maximum of 5000 barrels daily of that produced by Pure Oil Company. A connection is made at Midland with Magnolia's West Texas trunk line system, and a joint tariff has been published to apply on crude moving from the Hendrick field to the Gulf Coast via the Atlantic and Magnolia lines. Both Pure and Atlantic have contracted for a maximum amount of the daily capacity of Magnolia's line from Midland to the Gulf Coast, and Magnolia is now increasing the capacity from 18,000 to 25,000 barrels daily.

Atlantic has been transporting about 30,000 barrels daily from producing wells and storage tanks in the Hendrick field to Midland, with one intermediate station located in section 44, block 45, T. & P. Railway survey, T-1-S, Ector County, and is now erecting new stations in section 26, block 40, P. S. L., Winkler County, and in section 2, block 42, T. & P. Railway survey, T-2-S, Ector County. All stations are equipped with electric driven centrifugal pumps.

Atlantic Oil Producing Company is creating a big crude storage farm at its Midland terminal in the north half of section 40, block 38, T. & P. Railway survey, T-1-S, and last week placed order for 15 new 80,000-barrel steel tanks for this site, while 12 80's and five 55's are erected and partially filled. Atlantic has five 80's completed in the Hendrick field. No plans have been made to market any of this storage oil from Midland via tank cars, as Atlantic has elected to build tankage and hold the oil until same can be transported via Magnolia's line to its export terminals at Atreco, near Beaumont.

Los Angeles.—The Emsco Derrick and Equipment Company has increased its capitalization from $3,000,000 to $5,000,000, making it one of the largest manufacturers of its kind in the world.

An Economic Analysis of the Fuel Oil Situation

By ARTHUR KNAPP*

Petroleum Engineer, The United Gas Improvement Co., Philadelphia, Pa.

THE economics of fuel oil must be considered in two aspects; viz., fuel oil as one of a number of competitive fuels and fuel oil as a refined product of petroleum.

"Fuel Oil" is usually defined as that product of petroleum which is used in furnaces for the generation of heat by simple combustion. It is true that any product of petroleum used in an internal combustion engine is essentially a fuel oil, but such oils are not included in the class known as "Fuel Oil."

Fuel Oil as One of Several Fuels

For a number of years the petroleum industry has believed that the petroleum reserves were very limited and that petroleum products would begin to become scarce within a few years. The industry has believed that there would be a gradual but continued rise in prices as a result of this impending scarcity.

The industry, therefore, has informed the users of fuel oil that, once they were eliminated by price, they were eliminated for all time. The petroleum industry believed and made the consumer believe that there would never be any appreciable recession in price which would make it worth while for any consumer of fuel oil to resist elimination with the expectation of future lower prices.

The effect of this attitude toward the future of the fuel-oil market is shown by the trend of consumption of fuel oils by the railroads and by public utility power plants generating electric power.

On Fig. 1 are plotted the fuels consumed by public utility power plants. The decrease in the fuel oil used may be partly the result of increased efficiency of use. If the price of fuel oil alone was the factor governing the major portion of the decreased use, the curve of consumption should bear some relation to price. However, the major influence has been the fears of the consumers that fuel-oil prices would continue to rise, and they have offered no resistance to elimination as fuel-oil users as soon as the price became too high.

Fig. 2 shows the consumption of fuel oils by railroads. The railroads have had the same feeling regarding the fuel oil situation as have the public utilities. The increase in the efficiency of use, which has been brought about by the railroads, would have built up considerable resistance against elimination had the railroads been given reasnoable assurance that price recessions might be expected.

The railroads and public utilities producing electric power together consume at least a quarter of the fuel oil marketed. They have a common problem of purchasing. They cannot make immediate adjustments of the selling prices of their services and are, therefore, primarily interested in a stable market. They require long-time contracts and these are the principal reasons why they have been more interested in coal than in oil.

Another 20 per cent or more of the fuel oil produced is consumed as bunker oil. The intensive competition to be found in ocean transportation, coupled with the slowness with which it is possible to adjust ocean freight rates, makes it imperative that shipping companies shall also have a stable fuel market.

Another 10 per cent of the fuel oil produced appears in the statistics as exported. The greater part of this is also used in vessels and may be considered under the heading of bunker oil.

In other words, over half of the fuel oil sold is sold in competition with coal and gas, not only on a cost basis, but also on the basis of stable markets and long-term contracts.

The petroleum industry uses at least one-eighth of the fuel oil produced. Even in this use, coal is sometimes a competitor and gas is coming more and more into use, to the elimination of fuel oil. Petroleum coke is also a competitor.

About 16 per cent of fuel oil is consumed without severe competition at the present time because of its superior qualities in heat treating, smelting, cement burning, etc. This is a passing phase, as gas and powdered coal are being developed and will be serious competitors of fuel oil, particularly in large plants. The plant investment required for gas production or powdered coal use has been a handicap which is being overcome.

Of the remaining 20 per cent (approximately), the gas companies consume about 6 per cent in the production of manufactured gas. The manufactured gas industry as a consumer is gradually being eliminated by improvements in process. These improvements are the result of research under the threat of a continued rise in price.

About 4.5 per cent is used for heating houses and office buildings. Coal is not a serious competitor of fuel oil for heating office buildings, because of the extreme convenience of oil as a fuel. For dwelling houses, coal is always a competitor except for those who can afford to pay for the convenience of oil fuel. Domestic gas is coming more and more into the field and as soon as gas distributors can find some economic solution to the problem of overload which gas house-heating produces, domestic gas will be a serious competitor of fuel oil for heating dwellings.

Fuel Oil as a Petroleum Product

Fuel oil occupies a unique position among petroleum products since it is, in general, the residue of refining operations. It is also unique in that increased efficiency within the industry nearly always results in a decrease in the consumption of fuel oil. The use of gas under field boilers and the electrification of drilling and production operations result in fuel-oil economy. The use of refinery gas under stills and the introduction of heat exchangers result in further fuel-oil economy. The

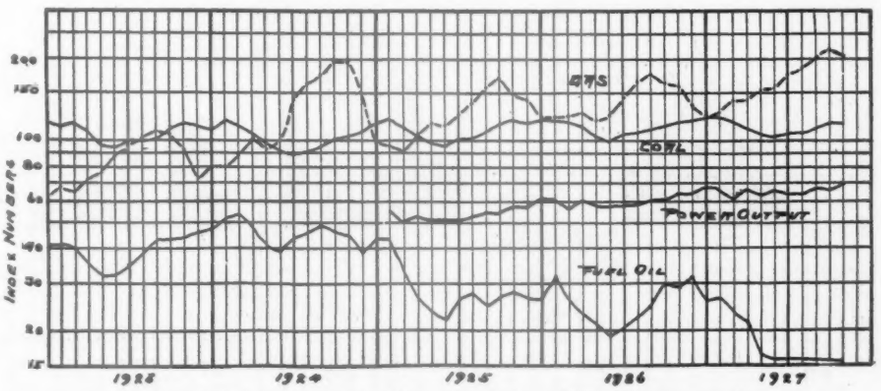


Fig. 1.—Daily average consumption of fuels by public utility power plants

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New York Meeting, February, 1928.

use of internal combustion engines for drilling, pumping wells, pipeline pumps, and tanker propulsion, all mean less fuel oil consumed.

Only one thing has worked toward a decrease in the fuel oil available for marketing, and that is cracking. The over manufacture of gasoline has been so extensive and so prolonged, however, that the economic balance between outputs and prices of gasoline and fuel oil has never been established.

Fig. 3 shows the ratio of fuel-oil price to gasoline price in Group 3 territory during the past five years. The trend of this ratio is upward, showing that fuel-oil prices have consistently increased as a proportion of gasoilne prices over this period. It is doubtful if the economic relation of these prices is a proportion. It is more probable that it is a difference.

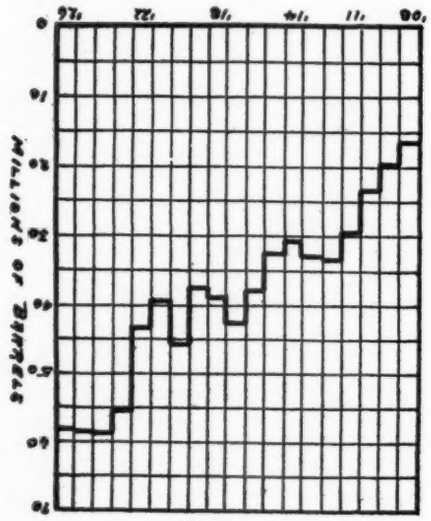

Figure 2.

Fig. 4 shows the difference between the price of gasoline and that of fuel oil and gas oil in Group 3 during the past five years. Previous to the advent of cracking there was a wide difference in price between gasoline and fuel oil, a difference that declined rapidly to an amount approximately equal to the relative value of fuel oil as such or as gasoline. This relation has not held in 1927 because of the general demoralization of both markets. During the past year, the difference has been decidedly in favor of selling fuel oil as such rather than cracking it into gasoline.

Statistical Analysis

It is impossible to go much further into the economics of fuel oil because of the lack of detailed statistics. Figure 5 shows the net stock changes of gas oil and fuel oil held at refineries east of California as reported by the American Petroleum Institute. In the past three years 16,456,000 barrels of gas oil and fuel oil have been added to the accumulations of the previous years (to December 1, 1927). This is 50 per cent of the total stocks of all oils accumulated by refineries during these three years. During this same period, there was a draft of 1,923,000 barrels upon the stocks of gasoline previously accumulated.

It is impossible to make an accurate statistical analysis of the national situation. All classes of fuel oils are reported under one heading and, in addition, California non-refinable crudes are reported with the fuel oils of that region. Because of the extreme flexibility of modern transportation, particularly ocean transportation, the national situation should be considered, and it is unfortunate that more detailed statistics are not available. It would be particularly useful if all fuel oils close to the seaboard could be considered in one study but such statistics are not available except under a general heading which includes all classes of gas oils and fuel oils.

Of the volume of all fuel oils in storage east of the Rockies, about two-thirds is held in regions bordering on the seaboards. This proportion has been almost constant for the past two years.

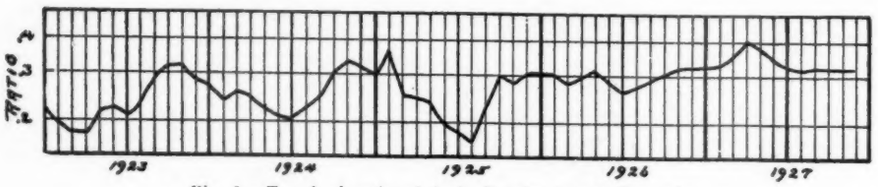

Fig. 3.—Trend of ratio of fuel oil price to gasoline price

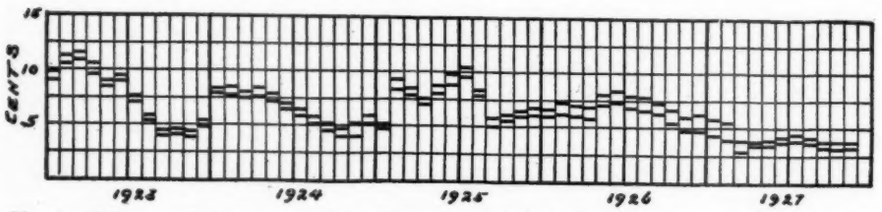

Fig. 4.—Difference between group 3 gasoline price and fuel oil price (upper line). Difference between gasoline and gas oil (lower line.)

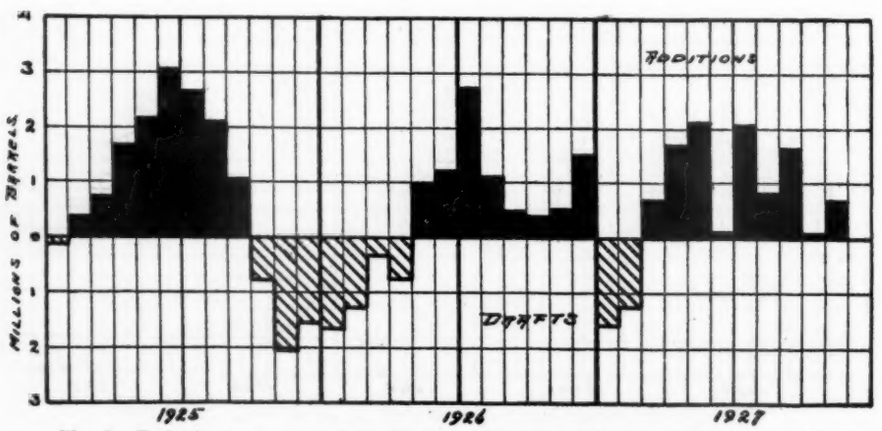

Fig. 5.—Fuel oil storage east of the Rockies. Monthly additions and drafts, A. P. I.

Conclusions

It is evident that the sales of fuel oils must be accelerated until they can keep pace with the other petroleum products. An increase in gasoline and kerosene sales would accomplish the same result to some extent through the elimination of some of the fuel oil by cracking. The possibilities for appreciably increasing the sale of these products does not appear to hold out as much promise as does the field of possible increase of fuel oil sales. The recovery of former fuel-oil customers would furnish an outlet for a large volume now without a market.

Real sales effort will be necessary in order to sell fuel oil in competition with other fuels. More attention will have to be paid to external competition and less attention to intensive competition within the industry.

It may be necessary to resort to research for new uses for petroleum products in general and fuel oils or the heavier oils, in particular. The industry has been out of balance since its inception, through having one product which was considered as the principal product. Kerosene was the first "principal product." Later gasoline took its place. During the past year or more the tide has swayed between gasoline and fuel oil. The industry will never reach stability until there is a balance of demand for all petroleum products. The industry should accelerate the approach of this balance by research into new uses.

Better balance could be obtained under present conditions by proper regulation of outputs and by proper merchandising. By "proper merchandising" is meant a proper relation between price and output in order to bring a close balance of the volume of sales of the various products. Proper merchandising also means a proper attiture toward the relation of the price of crude stored to cover contracts and the price of refined products sold under these contracts.

The industry is severely handicapped by a lack of more detailed fuel-oil statistics. The problem of marketing the current output of fuel oil and of reducing the present large stocks is a very serious one. The need of accurate and detailed statistics covering fuel oils is evident.

Ten Years' Application of Air at Hamilton Corners*

Paper read before the Petroleum Division, American Institute of Mining and Metallurgical Engineers, February meeting, 1928

By CHARLES R. FETTKE†

IN 1914, the officials of the Brundred Oil Corp., faced with the problem of introducing new methods to increase production in the old and nearly depleted pools of Venango County, became interested in the Smith-Dunn (Marietta) process which was at that time being tried out in Southeastern Ohio and which was already yielding very encouraging results. A license to use the process in Pennsylvania was secured from the owners of the patents. These patents were later declared invalid.

The method was first used in Pennsylvania on a property consisting of about 434 acres, of which 300 are productive, at Hamilton Corners, 15 miles northeast of Oil City, in Cherry Tree and Oakland Townships, Venango County. The producing horizon is the First sand of the Venango group. A small oil pool was opened up in this vicinity in 1904. By July, 1916, when the compressed air was first introduced to restore pressure, the production had dropped to a point where it was no longer possible to continue profitable operation. From that time until March, 1927, over 100,000 barrels of oil have been recovered from the tract. The property is being operated at present by the Brundred Oil Corporation and Lux. The 1926 production, amounting to 10,650 barrels, was only 400 barrels short of the maximum reached during any year of the 10-year period that the process has been in operation.

Inasmuch as the Hamilton Corners pool is the first one in Pennsylvania in which the Marietta process was tried out, and one in which it has been longest in continuous operation, considerable interest attaches to the results obtained.

Through the courtesy of H. D. Brown and W. J. Brundred, officials of the Brundred Oil Corporation, all their data on this operation were made available to the writer in connection with an investigation of rejuvenation methods in the State for Pennsylvania Geological Survey.

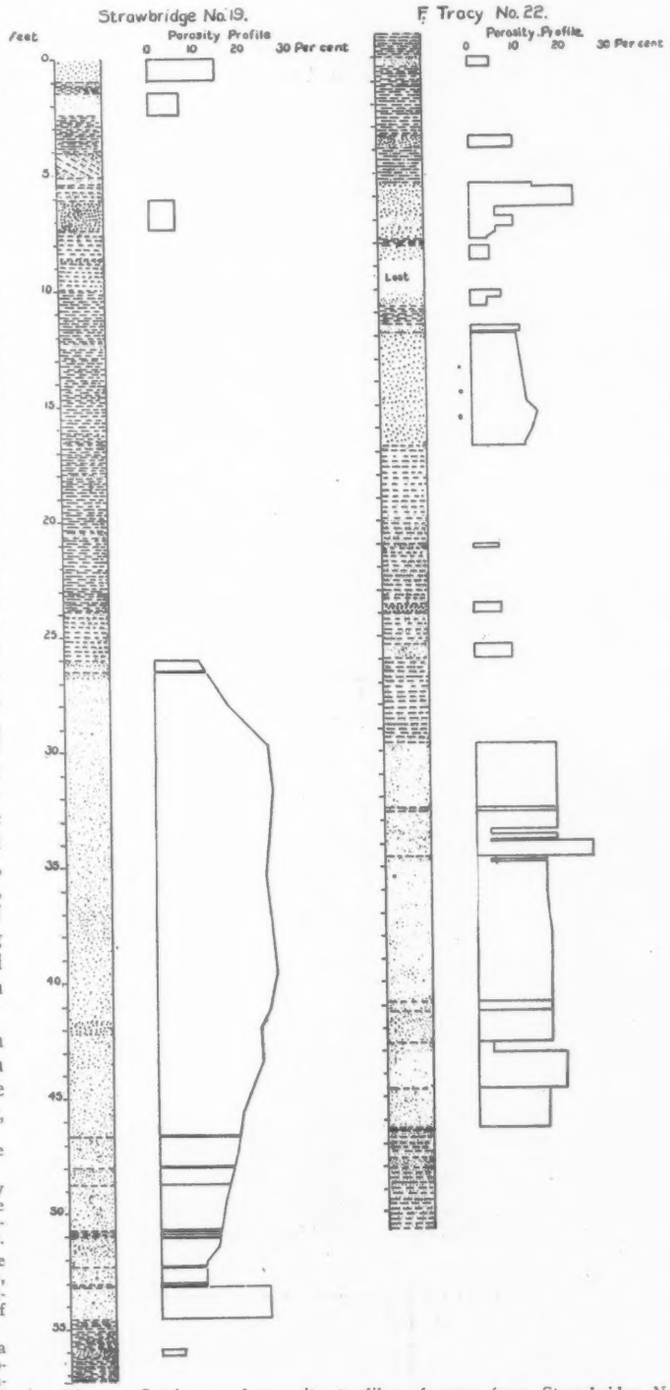

Fig. 1.—Sections and porosity profiles of cores from Strawbridge No. 19 and F. Tracy No. 22 wells.

Stratigraphic Position of the Producing Sand

The producing sand at Hamilton Corners is encountered at depths of from 364 to 560 feet, depending on the location of the well and the topography. It has been correlated by the operators of the region as the First Sand of the Venango oil sand group, as defined by Carll[1]. This group belongs to the Conewango formation, which is the westward equivalent of at least a part of the Catskill formation of Central and Eastern Pennsylvania. It is generally considered to be of Upper Devonian Age, although this is still a debatable question[2]. In a light greenish-gray fine-grained argillaceous sandstone layer, 4.5 inches thick, at the top of the sand in a core from F. Tracy No. 22 well, a number of fragments of marine shells were observed which would seem to indicate that the sand was deposited under marine conditions, although no other fossils, except occasional finely comminuated plant remains, were found anywhere in the main body of sand.

Characteristics of the Producing Sand

The producing sand is made up of three parts, an upper bench, a shale break, and the main pay. The upper bench, which ranges in thickness from 6 to 17 feet, shows considerable variation both vertically and laterally. It consists principally of medium to coarse-grained layers of sandstone with some interbedded shale and occasional thin beds of fine conglomerate. Some of it is cross-bedded. As a rule the porosity is low and very little oil production has come from it. The shale break ranges in thickness from 10 to 29 feet. While consisting mostly of

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†Associate Professor of Geology and Minerology, Carnegie Institute of Technology, and Associate Geologist, Pennsylvania GeologicalSurvey.

[1]John F. Carll: Geology of the Oil Regions of Warren, Venango, Clarion, and Butler Counties. Report III, Second Geol. Survey of Pennsylvania (1880) Plate XI.

[2]C. Butts: Pre - Pennsylvania Stratigraphy. Report of Topographic and Geologic Survey, Commission of Pennsylvania (1906-08) 199.

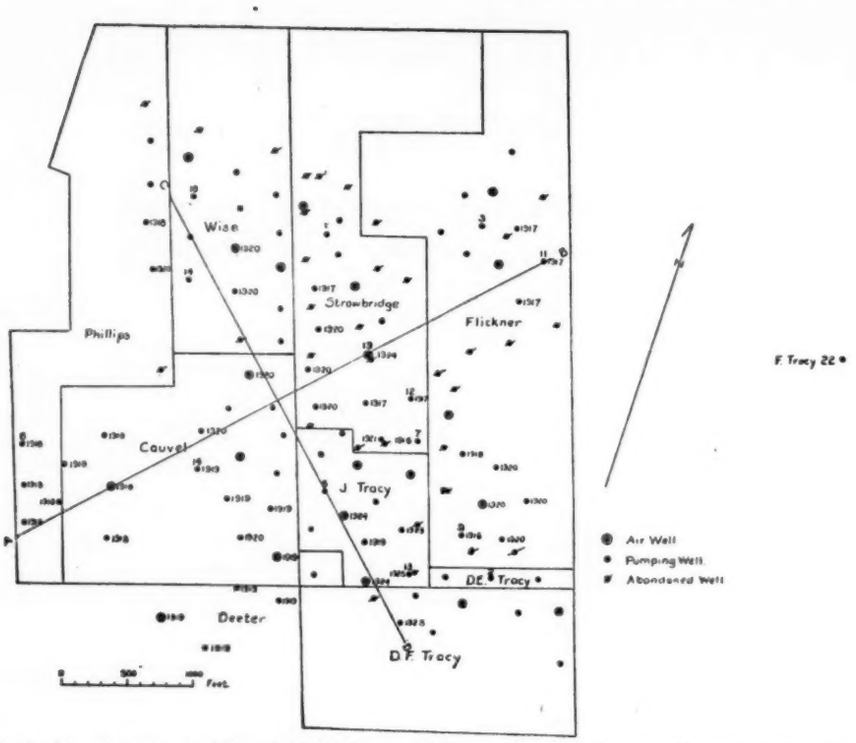


Fig. 2—Map of property of Brundred Oil Corpn. and Lux at Hamilton Corners, Venango County, Pa.

shale, it frequently has interstratified with it numerous thin, very fine-grained, dense sandstone seams of low porosity. The main pay varies in thickness from 14 to 30 feet, averaging about 20 feet over the entire property. It is made up almost entirely of a fine-grained sandstone with occasional thin shale partings. While, for the most part, it is comparatively friable and porous, occasionally thin layers occur in it that are very hard and dense. It does not show any cross-bedding.

Detailed sections of the sand as developed in Strawbridge No. 19 and F. Tracy No. 22 wells, obtained from core studies, are shown graphically by the usual conventional symbols in Fig. 1. The location of these wells is given on the property map appearing in Figure 2. The two cross sections of Figure 3, taken at right angles along lines *AB* and *CD* bring out the variation in thickness of the three parts of the sand.

In thin section, under the microscope, the fine conglomerate 6.53 feet below the top in the core from Strawbridge No. 19 well is seen to be made up largely of quartz pebbles and grains. A few chert and jasper pebbles and an occasional rhyolite pebble are also present. The pebbles are all fairly well rounded while the quartz grains are angular, as shown in Figure 4. Heavy minerals are scrace. Those observed are ilmenite, zircon, muscovite, tourmaline and cyanite in decreasing order of abundance. Inasmuch as the sample was treated with hot dilute hydrochloric acid to aid in its disintegration, magnetite, if originally present, probably went into solution. The zircon grains have frequently retained their crystal boundaries, although the majority are at least partially rounded. The largest have lengths of 0.176 mm. and diameters of 0.048. The turmaline grains are fairly well rounded while the cynite is angular. Silica, as a secondary crystalline outgrowth from the original grains, is the chief bond, calcite occurring only very sparingly between the grains.

The fine-grained sandstone, 39.52 feet below the top, consists primarily of quartz grains with only an occasional plagioclase grain and a few flakes of muscovite. About 15 per cent of the quartz grains are fairly well rounded, 45 per cent are sub-angular, and the remainder angular, as shown in Figure 5. While heavy minerals are scarce, they are much more abundant than in the fine conglomerate. In decreasing order of abundance, they are ilmenite, zircon, tourmaline, and cyanite; silica and a small percentage of koalinite or related mineral form the bond. A thin section from the sandstone, 49.34 feet below the top, shows very similar characteristics, with the exception that fairly well rounded grains are practically absent, 25 per cent of its grains being sub-angular and 75 per cent angular, as shown in Figure 6. Heavy minerals are more abundant although the same in character. A little kaolinite or related mineral is present. There is a larger percentage of silica bond, which occurs as secondary crystalline outgrowth from the original quartz grains, and considerable calcite.

Porosity

Table 1 shows the porosities of the sandstone from the cores obtained from Strawbridge No. 19 and F. Tracy No. 22 wells. The determinations were made according to the method described by Melcher.[3] They are also shown graphically by porosity profiles opposite the columnar section of the cores in Figure 1.

The Strawbridge No. 19 core contains 29.7 feet of sandstone with a porosity of 10 per cent or more, the average for this portion of the core being 19.9 per cent. The F. Tracy No. 22 core contains 22.1 feet with an average porosity of 15.6 per cent.

Some idea of the nature of the pores can be obtained from the photo-micrographs shown in Figures 7, 8 and 9, of polished surfaces by reflected light. The specimens were first hardened with bakelite varnish to prevent the tearing out of any of the grains and then polished in the usual manner. The white areas show the quartz grains while the black areas represent the pores. The specimen shown in

Table 1.—Total Pore Space by Volume in Cores from Two Wells

Strawbridge No. 19 Well			F. Tracy No. 22 Well		
Depth Below Top of Sand, Feet	Density of Grains	Pore Space by Volume, Per Cent.	Depth Below Top of Sand, Feet	Density of Grains	Pore Space by Volume, Per Cent.
0.20	2.696	14.9	0.19	2.759	4.8
2.37	2.674	6.8	3.61	2.695	9.7
6.53	2.657	5.8	5.50	2.724	13.9
26.10	2.659	10.3	5.76	2.671	22.7
27.92	2.676	16.0	6.63	2.685	5.5
29.64	2.659	24.7	7.07	2.681	9.4
31.54	2.649	25.8	7.47	2.688	5.6
34.13	2.655	24.6	7.74	2.685	3.8
35.23	2.646	24.0	8.42	2.650	4.4
37.07	2.657	25.1	10.17	2.708	6.7
39.52	2.654	26.5	10.51	2.659	3.6
41.05	2.651	24.8	11.66	2.672	10.7
41.90	2.650	22.9	11.94	2.650	9.7
43.29	2.670	23.4	14.91	2.651	12.2
45.52	2.677	18.6	15.28	2.651	14.2
47.38	2.661	17.1	16.03	2.656	13.3
49.34	2.641	14.7	16.63	2.654	11.9
51.41	2.632	12.9	21.09	2.667	5.6
52.16	2.699	10.1	23.62	2.691	6.0
53.61	2.664	24.0	25.49	2.688	8.4
56.00	2.706	5.0	30.91	2.669	17.6
			33.54	2.758	3.1
			34.20	2.667	25.9
			36.07	2.673	15.4
			38.08	2.674	16.2
			43.16	2.673	19.3
			45.49	2.660	15.3

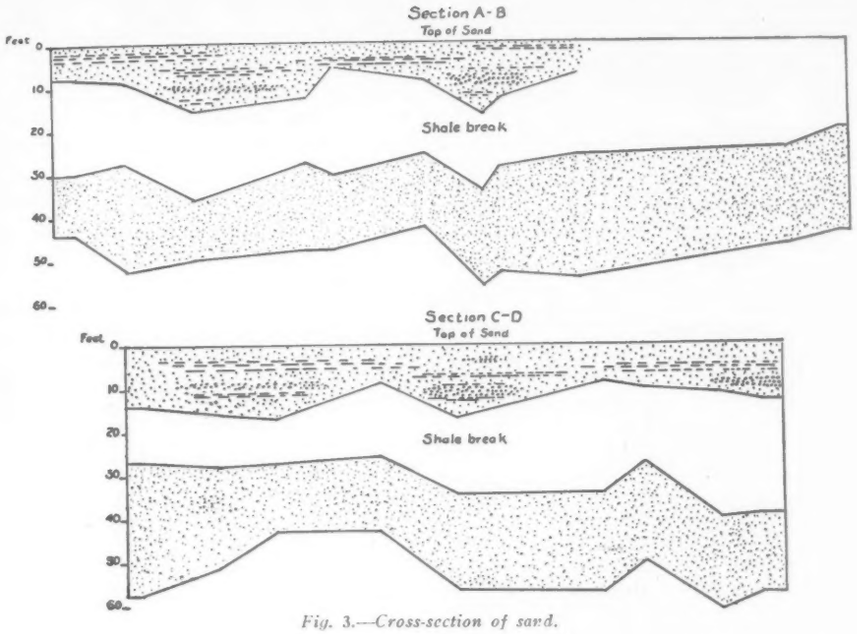


Fig. 3.—Cross-section of sand.

Figure 7 was taken at a depth of 6.53 feet below the top from the Strawbridge No. 19 core; that in Figure 8 at a depth of 39.52 feet; and the one in Figure 9 at a depth of 49.34 feet. They possess porosities of 5.8, 26.5, and 14.7 per cent respectively.

Size of Grains

Twenty representative samples were selected from different parts of the core from Strawbridge No. 19 well and crushed into individual grain size. A set of Tyler standard screen sieves was used for the mechanical analyses. Table 2, giving the position in the core as well as the porosity of the samples, shows the range in grain size and the variation between different horizons. The screen analyses emphasize the relationship between grain size and porosity, the more porous parts of the sandstone being those that show the greatest uniformity in grain size, as would be expected.

Uniformity Coefficient and Porosity

In order to bring out the relationship between uniformity of grain size and porosity more clearly, the uniformity coefficients as well as the effective sizes of the twenty samples were determined. The uniformity coefficient is the ratio of size of grain that has 60 per cent of the sample by weight finer than itself to the size which has 10 per cent finer than itself. The term "effective size" is defined as the size at the point where 10 per cent of the material by weight is composed of smaller grains and 90 per cent of larger grains. It is expressed in terms of millimeters. The effective size together with the uniformity coefficient define rather closely the size and uniformity of a sand. The uniformity coefficients, porosities, and effective sizes of the twenty samples are given in Table 3. Figure 10 shows graphically the close relationship between the porosities and uniformity coefficients of the samples tested.

[3]A. F. Melcher: Determination of Pore Space of Oil and Gas Sands. Trans. (1921) 65, 469. Texture of Oil Sands with Relation to the Production of Oil. Bull. Am. Assn. of Pet. Geol. (1924) 8, 731.

Table 3.—Uniformity Coefficients, Porosities, and Effective Sizes of Twenty Samples from Strawbridge No. 19 Core.

Depth Below Top of Sand, Feet	Uniformity Coefficient	Porosity, Per Cent.	Effective Size, Millimeters
0.20	2.35	14.9	0.160
2.37	3.58	6.8	0.018
6.53	3.74	5.8	0.172
26.10	2.57	10.3	0.108
27.92	2.14	16.0	0.076
29.64	1.58	24.7	0.116
31.54	1.65	25.8	0.114
34.13	1.52	24.6	0.122
35.23	1.58	24.0	0.110
37.07	1.56	25.1	0.115
39.52	1.64	26.5	0.106
41.02	1.52	24.8	0.125
41.90	1.95	22.9	0.157
43.29	1.64	23.4	0.107
45.52	2.03	18.6	0.070
47.38	2.09	17.1	0.065
49.34	2.32	14.7	0.074
51.41	2.33	12.9	0.103
52.16	2.66	10.1	0.089
53.61	1.97	24.0	0.093

Oil, Gas and Water Content of the Sand

Eight representative samples, each approximately 4 inches long, were cut from

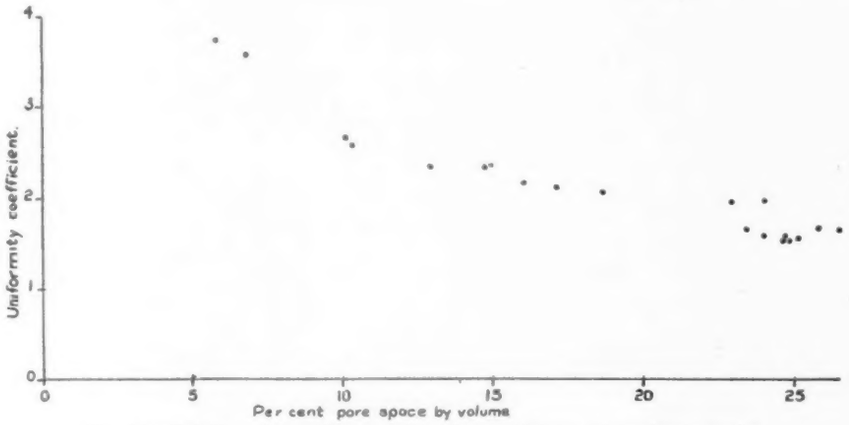


Fig. 10.—Relation of porosity to uniformity coefficienct of sandstone grains.

TABLE 2.—*Screen Analyses of Twenty Samples from Strawbridge No. 19 Core*

Size of Opening, Millimeters		0.20 Ft. Below Top. 14.9 Per Cent. Porosity	2.37 Ft. Below Top. 6.8 Per Cent. Porosity	6.53 Ft. Below Top. 5.8 Per Cent. Porosity	26.10 Ft. Below Top. 10.3 Per Cent. Porosity	27.92 Ft. Below Top. 16.0 Per Cent. Porosity	29.64 Ft. Below Top. 24.7 Per Cent. Porosity	31.54 Ft. Below Top. 25.8 Per Cent. Porosity	34.13 Ft. Below Top. 24.6 Per Cent. Porosity	35.23 Ft. Below Top. 24.0 Per Cent. Porosity	37.07 Ft. Below Top. 25.1 Per Cent. Porosity	39.52 Ft. Below Top. 26.5 Per Cent. Porosity	41.05 Ft. Below Top. 24.8 Per Cent. Porosity	41.90 Ft. Below Top. 22.9 Per Cent. Porosity	43.29 Ft. Below Top. 23.4 Per Cent. Porosity	45.52 Ft. Below Top. 18.6 Per Cent. Porosity	47.38 Ft. Below Top. 17.1 Per Cent. Porosity	49.34 Ft. Below Top. 14.7 Per Cent. Porosity	51.41 Ft. Below Top. 12.9 Per Cent. Porosity	52.16 Ft. Below Top. 10.1 Per Cent. Porosity	53.61 Ft. Below Top. 24.0 Per Cent. Porosity
Through	Caught on																				
6.680	4.699					4.6															
4.699	3.327					0.0															
3.327	2.362			0.4		0.0															
2.362	1.651	0.2		2.3	0.2	0.0															
1.651	1.168	0.1		5.3	0.5	0.1															
1.168	0.833	0.6		10.9	0.1	0.2	0.1	0.2			0.1										
0.833	0.589	7.3	0.1	27.1	0.5	0.4	0.1	1.1	0.1		0.1		0.5	0.3	0.1						
0.589	0.417	20.1	0.1	14.8	3.5	1.7	0.2	1.6	0.2	0.1	0.2	0.1	1.7	3.2	1.3				0.5	0.6	0.1
0.417	0.295	34.1	0.2	15.4	30.3	2.9	1.8	3.5	0.6	0.2	0.8	0.4	8.9	48.5	7.0	0.3		1.8	21.1	21.2	3.2
0.295	0.208	14.6	1.6	9.5	17.8	2.1	8.5	12.2	11.1	1.6	2.6	1.6	7.4	27.4	11.0	1.8	1.2	17.9	27.8	25.0	22.0
0.208	0.147	13.5	29.6	6.9	25.1	34.0	61.2	54.1	68.0	61.8	68.1	60.6	62.7	14.4	35.5	29.6	26.0	28.8	26.2	26.2	34.5
0.147	0.104	5.9	26.2	3.0	11.8	38.3	22.5	21.4	14.7	27.7	22.6	29.9	13.2	5.1	34.2	42.2	43.0	30.5	13.3	13.1	26.3
0.104	0.074	0.7	10.7	0.8	2.1	5.6	2.5	2.8	2.7	4.1	2.4	3.8	1.8	0.9	6.8	13.8	14.6	9.5	4.6	4.3	9.6
0.074	0.061	0.7	9.5	1.1	1.9	2.4	1.0	0.8	0.7	0.8	0.6	1.2	1.0	0.3	1.0	3.6	4.5	3.6	2.2	2.2	1.5
0.061	0.046	0.3	5.7	0.7	1.3	1.7	0.6	0.6	0.5	0.8	0.6	0.7	0.7	0.2	0.6	2.1	2.0	2.2	2.4	1.9	1.0
0.046		0.3	15.1	1.7	3.8	5.3	0.9	0.8	0.6	1.7	0.6	0.3	0.9	0.2	0.9	5.3	7.2	4.3	0.9	3.9	2.4

Table 4.—Oil and Water Content of Eight Samples from F. Tracy No. 22 Core

Position of Sample in Core, Feet Below Top	Density of Rock	Total Pore Space by Volume, Per Cent.	Total Pore Space Occupied by Oil, Per Cent.	Total Pore Space Occupied by Water, Per Cent.	Total Pore Space Not Occupied by Oil or Water, Per Cent.
14.91—15.24	2.328	12.2	16	69	15
16.03—16.36	2.303	13.3	14	59	27
25.49—25.82	2.462	8.4	34	55	11
30.91—31.24	2.199	17.6	26	45	29
37.75—38.08	2.240	16.2	22	43	35
40.99—41.33	2.240	16.2	22	45	33
43.16—43.49	2.157	19.3	21	40	39
45.49—45.82	2.252	15.3	23	35	42

the core of F. Tracy No. 22 well as soon as it was taken out of the core barrel, for the determination of their oil content. The method of procedure was similar to that described in a previous paper.[4] The results are shown in Table 4. The average oil content of the eight samples was only 22 per cent of their total pore space. Unfortunately, such samples give only an approximate idea of the actual oil content of the sand in the ground. They give a minimum figure, and the actual oil content may be much greater, particularly in very porous open sands, which allow the oil to escape readily. Even with the use of a double-tube core barrel, a certain percentage of oil undoubtedly escapes and is replaced, at least in part, by water. Some evaporation losses also take place while the samples are in storage, and there is a slight unavoidable loss after they are removed from the containers and crushed preparatory to testing.

The wells in the Hamilton Corners pool have produced considerable quantities of gas along with the oil and it is very probable that not all of this gas was originally in solution in the oil. A little salt water is also present in the sand. It would be very difficult, therefore, to estimate just what percentage of the total pore space was oroginally occupied by oil.

Installation and Application of Air Pressure

The original compressor plant consisted of a direct-connected 75-hp. gas engine and single-stage compressor. It was started on June 27, 1916. The pressure used ranged from 45 to 60 pounds. At the end of 1924, another similar unit was added, thereby doubling the capacity of the plant. On Nov. 7, 1925, a fire destroyed the compressor building. The first compressor was started again on December 10 and the other on January 5, 1926. This has been the only serious interruption during the interval since 1916. On March 5, 1926, the pressure was raised to 110 pounds and it is now kept within the limits of 95 to 110 pounds. Since July, 1926, the amount of of air going into each air intake is being measured periodically, usually at least once every two months, so that this can be regulated intelligently. Only air has been compressed and introduced into the sand.

At present, 21 wells on the property are equipped as air intakes, 13 of which are old wells drilled prior to the application of the air pressure and eight are new wells drilled since June, 1916. In preparing the old wells for air intakes, burlap packers are used, cemented just above the sand, as described by Lewis.[5] Two-inch tubing is used. The new wells intended for air intakes are not shot. The packers are placed in the shale break. Sometimes a single one of the hook-wall type and at other time two—a hook-wall and an anchor—are used.

There are 76 pumping wells, 40 of which are old and 36 new. A portion of the new wells have been drilled around the edges of the pool, as shown on the map in Figure 2, and have extended its boundaries somewhat. The new wells are indicated by the year in which they were drilled.

The map shows the present distribution of the air intakes with respect to the pumping wells. Their number and arrangement have necessarily undergone more or less change from time to time during the interval that has elapsed since the air pressure was first applied. Considerable trouble with by-passing has been experienced. For this reason the lowest pressure that would yield appreciable results has been employed. Only recently, an increase in pressure has become necessary in order to keep up production. It is now necessary to regulate carefully the amount of air going into each well, as there are several on the propery which otherwise, at 110 pounds pressure, would be capable of taking the major portion of the entire output of the compressor plant without any commensurate increase in production in the surrounding wells.

On March 5, 1927, 17 of the 21 air-intake wells were taking 351,800 cubic feet of air, an average of 20,700 cubic feet per well. The minimum for any one well was 7440 and the maximum, 33,020 cubic feet. Four of the air intakes were shut off.

Production

On the north, west and south, the property includes the limits of the pool, as shown in Figure 2. On the east, the pool extends a considerable distance beyond, but air pressure has not yet been applied to that part of it. The 300 productive acres on which the air pressure has been used have yielded 102,373 barrels of oil during the period from June 27, 1916 to March 1, 1927. The gross production in barrels per month for that period is shown by the curve in Figure 11. The curve brings out the rather marked seasonal variations due to difficulities at-

[4]Charles R. Fettke: Core Studies of the Second Sand of the Venango Group from Oil City, Pa. Petroleum Development and Technology in 1926, 228-229, A. I. M. E.

[5]J. O. Lewis: Methods of Increasing the Recovery from Oil Sands. Bur. of Mines Bull. 148 (1917) 43.

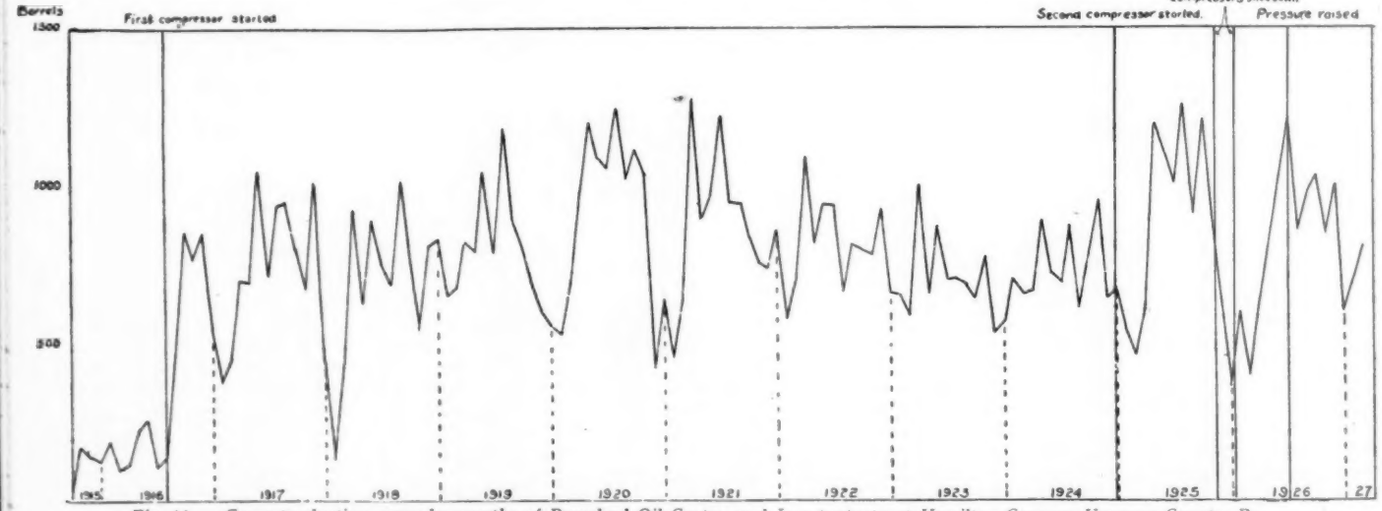


Fig. 11. —Gross production curve by months of Brundred Oil Corpn. and Lux property at Hamilton Corners, Venango County, Pa.

tending operation during the winter months. The yearly variations have not been so large but in order to keep up this fairly uniform production, a certain amount of new drilling has been necessary, as a study of the map in Figure 2 will indicate. Also, it has been necessary to increase the compressor capacity and finally the air pressure.

During the last four months of 1915, the average daily production per well of the 38 producing wells then on the property was only 0.1 barrel, while in 1926 the average per well for the 76 pumping wells wos 0.4 barrel.

Of the nine leases comprising the property, the J. Tracy has yielded the best results. This lease, consisting of 23 acres, has produced 36,143 barrels of oil during the period from June 27, 1916, to March 1, 1927, an average of 1571 barrels per acre. During the 10 months preceding the introduction of the air pressure, the average daily production per well of the nine wells on the lease was 0.1 barrel. In 1917, the average per well had increased to 1.38 barrels while in 1926 it was still 0.8 barrel.

Gravity of the Oil

Gravity determinations were made on the oil from 13 wells distributed over various parts of the property. The results are given in Table 5 and the location of the wells is shown in Figure 2. The readings were all taken an the same day on oil as it came from the well.

Table 5.—Gravity of Oil at Hamilton Corners, Pa., in Degrees A. P. I.

Cauvel No. 14	46.3
Flickner No. 3	44.9
Flickner No. 9	45.5
Flickner No. 11	46.0
Phillips No. 6	45.6
Strawbridge No. 1	44.5
Strawbridge No. 7	44.7
Strawbridge No. 12	46.4
D. E. Tracy No. 2	45.7
J. Tracy No. 8	44.8
J. Tracy No. 13	45.6
Wise No. 10	44.2
Wise No. 14	44.9

Utilization of Gas

The gas from most of the wells has not yet reached the stage of dilution with air at which it cannot be utilized to operate gas engines. It is still used in the engines that drive the pumping powers. Recently, however, it has become necessary to bring some gas from another property to operate the engines at the compressor plant.

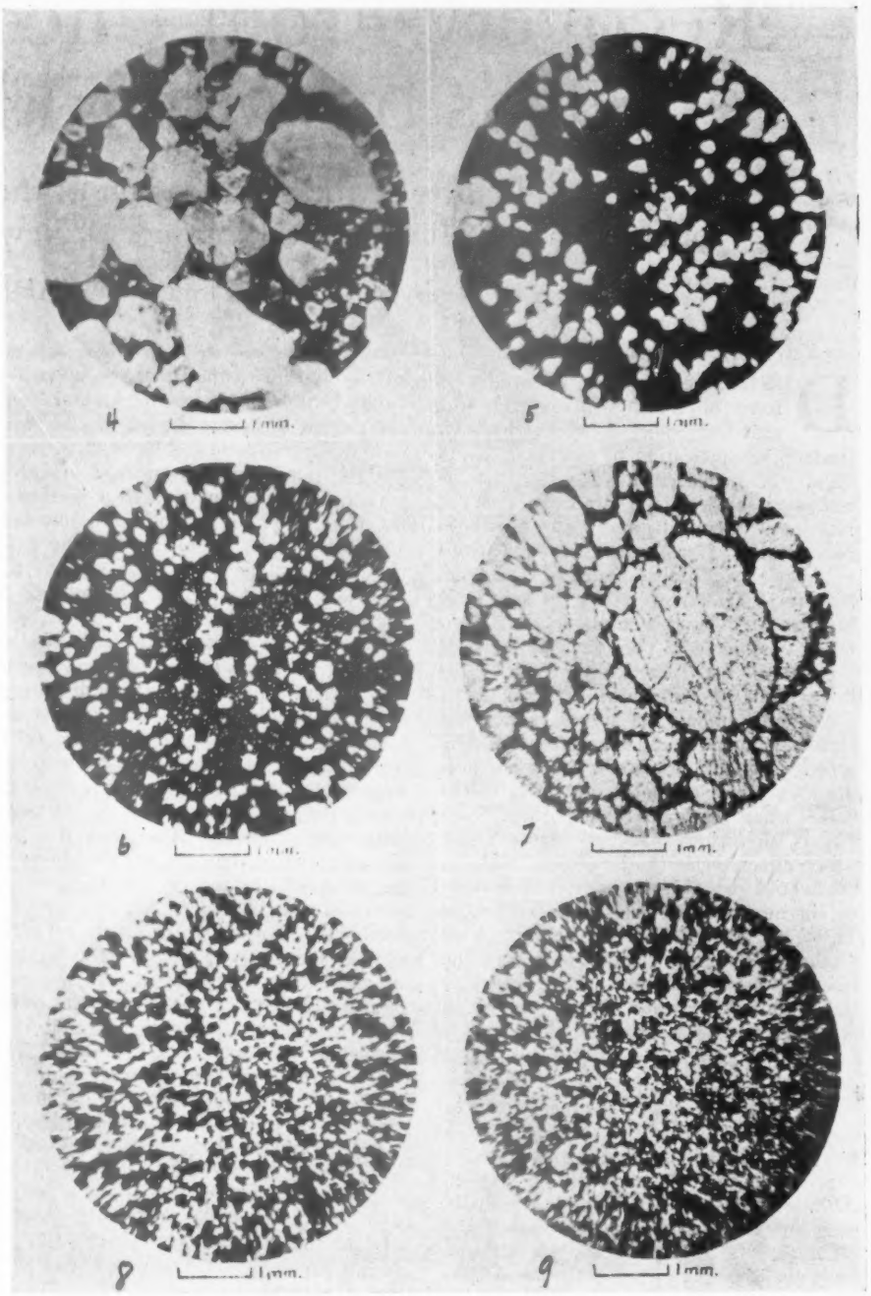


Fig. 4.—Small pebbles and grains from fine conglomerate occurring 6.53 ft. below top of Strawbridge No. 19 core.

Fig. 5.—Grains from sandstone occurring 39.52 ft. below top of Strawbridge No. 19 core.

Fig. 6.—Grains from sandstone occurring 49.34 ft. below top of Strawbridge No. 19 core.

Fig. 7.—Polished surface of fine conglomerate occurring 6.53 ft. below top of Strawbridge No. 19 core.

Fig. 8.—Polished surface of sandstone occurring 39.52 ft below top of Strawbridge No. 19 core.

Fig. 9.—Polished surface of sandstone occurring 49.34 ft. below top of Strawbridge No. 19 core.

Secretary Asks States to Pass Uniform Oil Laws

Washington, D. C.—Governors of the oil-producing States were last week asked by Secretary of the Interior Work, chairman of the Federal Oil Conservation Board, to express their views as to the possibility or probability of all the oil-producing States uniting upon uniform State legislation, as recommended in the report recently submitted by the Committee of Nine.

Letters were addressed by the secretary to the Governors of Arkansas, California, Colorado, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Montana, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Utah, West Virginia and Wyoming, declaring that the "trend of thought in the oil industry is decidely in favor of remedial action" and that an expression of opinion at this time would be opportune.

"I know that you have given much thought to this vital matter," Secretary Work wrote. "What we desire, of course, is practical conservation of our petroleum resources by whatever means is most feasible. I would appreciate if you will let this board have your viewpoint, together with such recommendations as you may care to advance."

The secretary declared that the Federal Oil Board members believe the report recently submitted by the Committee of Nine "to be constructively sound and, further, that the tentative bill drafted by the committee as a part of its report would, if enacted into law, undoubtedly cure many of the existing evils."

The committee recommended immediate and further study of the gas phase of the problem, and in soliciting the co-operation of the State executives, the secretary asserted the oil board hopes to clarify this particular issue.

Recovery From Unconsolidated Sands by Water Flooding

Paper read before Petroleum Division of the American Institute of Mining and Metallurgical Engineers, New York Meeting, 1928

By L. C. UREN and E. H. FAHMY

(New York Meeting, February, 1928)

DURING recent years, oil producers have observed with interest the practical success which has attended the application of water as a medium for displacement of oil from its reservoir sands in the Bradford field of Northern Pennsylvania and Southern New York. Here, according to various authorities, additional recoveries of from 2000 to 12,000 barrels of oil per acre have been secured by this method, after ordinary flowing and pumping methods of production had practically reached the lower limit of economic operation.

Notwithstanding the success which has attended the practical use of the flooding process in the Bradford field, oil producers in other regions are skeptical of its value when applied under physical conditions differing markedly from those which characterize the Bradford field. Its use would probably be construed as illegal in most of the oil-producing States. This general reluctance on the part of oil producers in other regions to accept the flooding process is due in large part to lack of information on the factors which influence its operation and efficiency.

With the purpose of clarifying to some extent the issues involved, and of determining when the flooding process may or may not be effectively employed, the writers have conducted a series of laboratory experiments under carefully controlled conditions, designed to indicate the influence of various physical, chemical and lithologic factors. These experiments have not been conducted under conditions identical with those which exist at depths far below the earth's surface, so that direct quantitative comparisons with field results are not justified, but it is believed that the experimental results at least warrant qualitative interpretations that may be applied to field conditions. In this paper, the methods employed in the conduct of these experiments are briefly explained, and the results, together with the conclusions based thereon, are presented.

Factors Influencing the Displacement of Oil from Sands by Water-Flooding

Before presenting the experimental data, it will be desirable to consider the manner in which the residual oil is retained within the oil sand and the physical effects which occur when it is displaced by water. With knowledge of the mechanics of flooding, we will then be in a position to study the effects of the several variables which influence the oil displacement.

The water-flooding process is to be regarded as a secondary method of recovery, to be applied only after a portion of the oil present in the oil sand has been expelled by the expansion of the associated natural gas. A large part of this natural gas was originally in solution in the oil under high pressure, but on being released from solution by reduction in pressure, it assumes the form of minute gas bubbles distributed through the oil mass.[1] Though these bubbles expand and to a large extent escape from the oil to well outlets, and by gravitational segregation accumulate to form relatively large masses of gas trapped in the oil sand above the surface of the residual oil, it seems probable that the oil remaining in the sand will never be entirely free of occluded gas bubbles. After pressure equilibrium is attained within the oil sand, we may therefore conceive of the residual oil as being concentrated in the pore spaces of the lower portions of the reservoir rock, the oil retaining within it a myriad of gas bubbles of all sizes. The upper portion of the reservoir sand remains wet with oil, but contains chiefly gas within its pore spaces, rather than oil. It will be observed that under the conditions described, the oil will be retained primarily by the force of adhesion on the sand grains; also, by capillary attraction between the sand grains, and as films inclosing gas bubbles. There will also be a certain amount of free-draining oil left without motivating force in the sands, by reason of gas drainage.

When water is introduced into a partially depleted oil sand in which the residual oil is held under the conditions described, if applied in such a way as to expel the oil without "by-passing" or "trapping," it may largely displace the free-draining and capillary-held oil; but only to a limited extent will the adherent oil be removed. The free-draining oil and capillary-held oil is merely driven ahead of the encroaching water by a process of physical displacement resulting from its superior pressure and density, aided by the natural immiscibility of the two fluids. It is possible that capillary-held oil may also be slowly displaced by water due to the superior capillary attraction of the sand pores for the latter. Release of oil held to the sand-grain surfaces by adhesion, may be accomplished only when the flood water is capable of preferentially wetting the oil-wet sand-grain surfaces. Pure water is ordinarily incapable of doing this, but when certain flooding "agents" are dissolved in the flood water, the equilibrium tension of the oil-water-silica interface may be so altered as to permit of more or less complete displacement of the adherent oil.

Consideration of the mode of displacement of oil from the reservoir sand by water-flooding, leads to the expectation that a number of different variables will be found to influence the efficiency of the process. We should expect the size of the sand grains, their porosity and the viscosity of the oil to largely determine the resistance offered to displacement. We know that the inter-facial tensions developed between the oil and the floodwater, between the minerals composing the reservoir sand and the oil, and between these same minerals and the floodwater, must be important factors in determining the extent to which the oil will be retained on the sand grains by adhesion, and between the sand grains by capillarity. Modification of these interfacial tensions by contact with gas bubbles will probably also be found to have an influence on release of the oil from the sand grains, and in the subsequent movement of oil through the sands, these gas bubbles will again have an important effect. Temperature will be found to be a factor, since it influences the oil viscosity to an important degree, and also to some extent, the interfacial tension relationships. Capillary effects and readjustments due to operation of interfacial forces require time in reaching equilibrium, and we may therefore expect to find that the rate of advance of the floodwater through the reservoir sand will be a factor in determining the efficiency of oil recovery. The rate of advance in turn, is dependent upon the pressure applied to the flood water—or rather, upon the differential pressure operative in moving the fluids through the sands. This differential pressure, of course, is an expression of the superiority of the pressure of the floodwater in comparison with the resistance to movement offered by the reservoir sand.

The laboratory experiments, results of which are summarized in the sections following, have been planned to determine the extent to which the more important of these different factors influence the efficiency of oil recovery by water-flooding. The data are, as yet, incomplete, but enough have been assembled to permit of drawing certain conclusions which will be of interest in forecasting whether or not

[1] For a detailed description of the mechanics of expulsion of petroleum from its reservoir rock by expanding natural gas, see an article by L. C. Uren in National Petroleum News, (Jan. 26, 1927.)

the flooding process will be effective under a given set of field conditions.

Materials and Equipment Used in the Flooding Experiments

The sand used throughout most of the experiments was a clean, white beach sand, containing but a few per cent of minerals other than quartz. In order that the influence of grain size might be properly interpreted, all experiments were performed with carefully sized sands. The tests were conducted throughout, with unconsolidated sands containing no cementing material whatever. Porosities were therefore high, though this factor could be controlled within certain limits by varying the degree of compaction of the sand.

The oils employed in the flooding tests were crude petroleum from the following sources and having the properties indicated:

Oil No.	Source	A. P. I. gravity	Saybolt Universal Viscosity at 650° F.
1	Santa Fe Springs, Cal.	31.5	80-Sec.
2	Los Angeles Basin, Cal.	24	156 "
3	San Joaquin Valley, Cal.	15	6,000 "
4	Tonkawa, Okla.	41.5	53 "

Oil No. 2, a California, asphaltic-base oil of medium density and viscosity, was used in most of the experiments.

The flooding medium employed was either water or a water-solution of some solute, which, it was thought might confer special properties. A number of tests were made with distilled water, primarily to establish a standard of comparison. Successive tests with various water solutions were then made, and in order to permit of some measure of comparison, the solutions were customarily diluted to one-tenth normal. In some cases, where the reagents appeared to possess special properties, tests were made with more dilute or more concentrated solutions.

The experiments were conducted in glass-walled containers about 16-inches high and two and one-half inches in diameter, of the form sketched in Figure 1. Sands were packed in the containers by carefully tamping to the desired porosity, the sand being moistened with oil as introduced. After charging with sand and oil, the ends of each flooding "tube" were fitted with rubber stoppers, sealed to the glass container with molten paraffin. Glass tubes penetrating these stoppers permitted the floodwater to enter at the bottom and the displaced oil to overflow at the top into a graduated receiving cylinder. Several of these containers, connected with a common water reservoir, as illustrated in Figure 1, permitted of conducting as many tests concurrently under similar conditions.

The sand compacted in the tubes was in all cases practically saturated with oil before the floodwater was admitted. In the process of filling the tubes with oil-wet sand, it was found that many air bubbles were occluded, which could only be removed with difficulty, so that the pores of the sand would be left incompletely saturated with oil. In order to avoid this, in many of the experiments, only enough oil to moisten the sand was introduced as the tubes were tamped, and after the corks had been inserted, additional oil was drawn in through the lower ends of the tubes by applying suction from a vacuum pump at the upper end. It is believed that this method results in practically complete saturation of the sand.

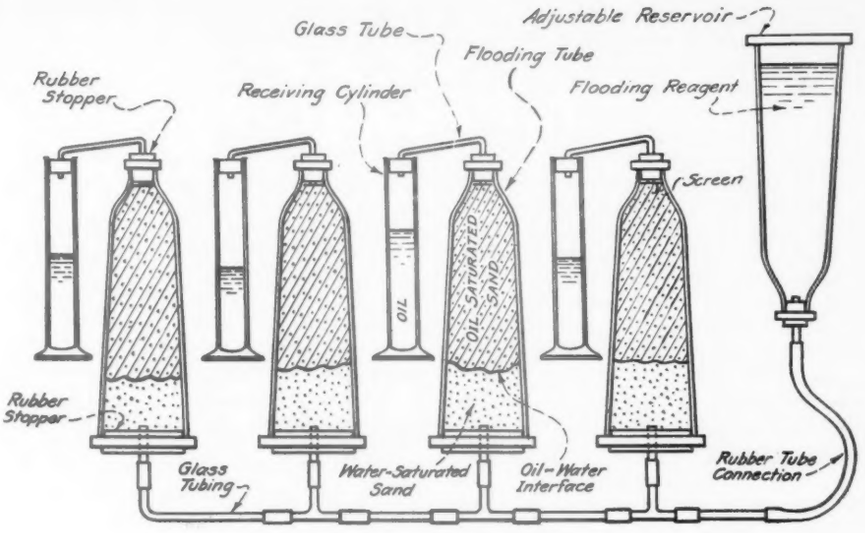


Figure 1. Sketch of apparatus used in flooding tests.

In order to standardize the rate of progress of the flooding reagent through the sand, the elevation of the flooding reagent reservoir was given special attention, and was frequently adjusted to maintain the desired static head. This head was measured and recorded for each experiment. Capillarity provides an additional unward pressure aiding the floodwater in displacing the oil from the sand. This capillary head was also carefully measured and taken into consideration in computing the effective displacement pressure.

With the apparatus and materials described, two series of tests were made. In one set of experiments, a small static pressure was maintained on the flooding medium by elevating the water reservoir to from one to 10 inches above the oil overflow tube. This pressure resulted in a slow rate of progress of the flooding medium through the sand, giving it time to react both physically and chemically. In these tests, from five hours to as much as 27 days in extreme cases, were required for the floodwater to reach the overflow tube. The second series of tests were performed more rapidly, a vacuum pump connected to the overflow tube, promoting rapid advance of the flooding medium through the sand. Such tests were completed in from 30 minutes to one hour. The experiments were closely watched and observations made at least twice daily. The fluid levels were at all times maintained as constant as possible by frequent readjustment of the level of the flooding medium in the reservoir.

Influence of Size of Sand Grains on Flooding Efficiency

The size of the mineral grains composing the oil sand has an important influence on the percentage recovery in flooding. Finer grained sands, generally speaking, have smaller pore openings than coarser sands, and they therefore offer greater resistance to the passage of fluids through them. Finer grained sands also show greater tendency to flood irregularly, the floodwater seeking the channels of lesser resistance and bypassing lenses or irregularly shaped bodies of oil sand that may be left completely saturated. The data presented in Table 1 show in all but one instance—the result of which is questionable—a decrease in the percentage recovery with diminution in the size of the sand grains.

Table 1—Results of Tests Showing Influence of Sand Grain size on Flooding Efficiency, Using Distilled Water As the Flooding Medium.*

Size of Sand Grains, mesh	Approximate time of test, days	Porosity of Sand Per cent.	Hydrostatic Head Maintained, In.	Percentage Recovery
20 to 40	2	45.0	6	41.3
40 to 60	5	42.3	6	30.0
60 to 80	3	43.0	6	34.2
80 to 100	6	45.0	6	33.0
100 to 120	7	41.6	14	27.4
150 to 200	7	45.4	14	9.6

*No. 2 oil was used throughout these tests.

Porosity of the reservoir sand is found to be one of the most important factors influencing the efficiency of recovery by water flooding, the percentage recovery diminishing as the porosity decreases. This is a natural result of the more compact arrangement of sand grains, with consequent reduction in size of the openings between grains attending a condition of low porosity. The data of Table 2 will serve to indicate to what extent porosity influences recovery. The same oil (No. 2) was used in these experiments as was employed in the tests, results of which are recorded in Table 1, and conditions were otherwise identical, except for the sand porosity.

Table 2—Results of Experiments to Determine Influence of Sand Porosity on Flooding Efficiency, Using Distilled Water As the Flooding Medium.

Size of Sand Grains Mesh	Porosity of Sand Per cent.	Percentage Recovery
40-48	41.1	37.5
40-48	35.0	32.5
40-48	29.1	22.2

Effect of Capillarity in Water Flooding

Some authorities have expressed the opinion that the displacement of oil by

water in water flooding is due to a capillary effect induced by the superior surface tension of water in comparison with that of oil. The experimental results presented in Table 1 and 2 apparently disprove this theory. Fine sands and sands of low porosity, generally speaking, have smaller pore openings than relatively coarse-grained and more porous sands. Inasmuch as capillarity is a force of greater magnitude in small pore openings than in large,[2] we should therefore expect more efficient displacement of the oil in the finer and less porous sands. The reverse, however, is apparently true, greater recoveries being secured from the coarse-grained and more porous sands. We may, therefore, conclude that capillarity does not play an important role in water flooding.

Effect of Physical Properties of the Oil on Flooding Efficiency

The viscosity, surface tension and density of the oil have an important influence on the percentage recovery possible from an oil sand by water flooding. The efficiency of recovery rapidly diminishes as the viscosity and density of the oil increases. Though the flooding process depends to a certain extent on the difference in density existing between the flood water and the oil, it is thought that the higher viscosity characteristic of the heavy oils is of far greater importance from the standpaint of flooding efficiency, than any difference in density which may exist. The surface tension of the oil and its interfacial tension against water and silica undoubtedly also have an important influence, and different oils are found to vary somewhat in these respects. Inspection of the data of Table 3 will give a general idea of the combined influence of viscosity, density and interfacial tension on flooding efficiency.

Table 3—Results of Experiments to Determine Influence of Oil Viscosity, Density and Surface Tension on Flooding Efficiency, Using Distilled Water As Flooding Medium.*

Character and Source of Oil	A. P. I. Gravity	Viscosity, Saybolt Sec. at 650° F.	Interfacial Tension between Oil and Distilled Water, Dynes	Recovery Per cent
Motor Gasoline (California)	54.5	30	19.9	67
Oklahoma Crude	41.5	53	12.6	67
Santa Fe Springs, Cal., Crude	31.5	80	16.3	60
Los Angeles Basin, Cal., Crude	24.0	156	17.5	20
Kern River, Cal., Crude	15.0	6000	18.6	2

*A 40 to 48-mesh sand was used in each of these experiments, and the porosity was maintained at as nearly the same percentage as feasible in each case.

[2]L. C. Uren and A. H. El-Difrawi: "Capillary Retention of Petroleum in Unconsolidated Sands." Petroleum Development and Technology in 1926, 70.

[3]These experiments were perfomed by S. H. Pope, a senior petroleum engineering student at the University of California, and reported in his thesis entiled "The Water-Flooding of Oil Sands" (May, 1927).

[4]E. Fyleman: The Separation of Adherent Oil or Bitumen from Rock. Jul. Chem. Ind. (London) (1922) 41, 14T-16T.

[5]P. G. Nutting: Chemical Problems in the Water-driving of Petroleum from Oil Sands. Ind. & Eng. Chem. (Oct., 1925) 17, 1035-1036.

[6]R. C. Beckstrom and F. M. VanTuyl: The Effect of Flooding Oil Sands with Alkaline Solution: Bull. Am. Asso. Petr. Geol. (March, 1927) II, 223-236.

[7]For an explanation of the influence of these interfacial tensions on the release of adherent oil on Silica sand grains, see an article by L. C. Uren in National Petroleum News, (Aug. 3, 1927).

The influence of surface tension on recovery is brought out by a comparison of the flooding tests made with commercial gasoline and Oklahoma crude. Though the crude has a greater viscosity and density, the recovery obtained with it is superior to that obtained with gasoline, apparently because the interfacial tension developed by gasoline against water is greater than that of the oil.

Effect of Temperature on Flooding Efficiency

Moderate increase in temperature will produce important reductions in the viscosity of petroleum, and as has been shown in the previous section, low viscosity is conducive to high recovery in the flooding process. Aside from this, increased temperature will result in a reduction in the surface tension of the oil, thus increasing the interfacial tension between the sand and the oil, and thereby promoting the release of the latter. The interfacial tension between the flood-water and the oil is also reduced by increase in temperature, and thus two phases of the system will be favorably influenced toward release of the oil.

Again, from the chemical standpoint, if a flooding agent such as sodium carbonate is used, the reactions between silica and the flooding agent proceed more rapidly as the temperature is increased. There is also less tendency for the products of the reaction to precipitate and clog the pores of the sand.

With the expectation that a considerable increase in flooding efficiency would result by conducting experiments under elevated temperature, a steamjacketed flooding tube was constructed and a number of experiments performed at temperatures ranging from 70 to 125°F.[3] The results were somewhat disappointing, it being found that only minor recovery increases were secured. The increase was nothing more than might have been expected from the reduced viscosity of the oil at the elevated temperatures used. Table 4 gives the results:

Table 4—Results of Experiments to Determine Influence of Temperature on Flooding Efficiency, Using Distilled Water As the Flooding Medium.*

Porosity of Sand, Per Cent.	Temperature of Oil, Water and Sand, Deg. F.	Recovery, Per Cent.
39.1	125	70.5
38.7	120	69.8
34.1	110	61.3
36.7	70	60.4

Influence of Dissolved Salts in Flood Water on Flooding Efficiency

Several investigators have reported that certain water-soluble salts, when dissolved in the flood water, have an important effect in releasing oil held by adhesion on the sand grains.[4][5][6]. The beneficial effect resulting from the use of these reagents has been found to be primarily due to changes in the interfacial tension relationships between the oil, water and mineral grain surfaces. Well-established physical laws indicate that release of the adherent oil from the sand grains, would be promoted by decreasing the interfacial tension between the flood-water and the mineral of which the sand grains are composed; or by increasing the interfacial tension between the oil and the mineral composing the sand; or, by decreasing the interfacial tension between the oil and the flood-water.

For release of adherent oil from oil-wet sand grains, the interfacial tension between the oil and mineral composing the sand, must be greater than the sum of the interfacial tensions between the water and the mineral and that between the flood-water and the oil.[7] Sodium carbonate is an effective flooding agent, because it hydrolyzes in water, forming sodium hydrate, which attacks silica, thus reducing the interfacial tension between the water and the mineral grain surfaces to zero; and it is also found to have a similar effect on the interfacial tension between the flood-water and the oil, possibly due to some obscure reaction with certain constituents of the oil.

A series of flooding experiments were performed with various solutions of water-soluble flooding agents, which confirm this theory; particularly that part of it which deals with the effect of decreasing the interfacial tension between the oil and the flood water. The effect of sodium carbonate, sodium silicate, sodium hydrate, sodium bicarbonate, sodium borate, alum, hydrochloric acid, acetic acid, sodium acetate, phenol, carbonic acid and sodium chloride, were all tried in turn and their relative value as flooding agents determined. A method was also devised, with the aid of the De Nouy Tensiometer, for obtaining comparative measurements of the interfacial tension between these solutions and the oil used. In a long series of experiments with the different reagents mentioned, it was consistently found that substances which reduced the oil-water interfacial tension also increased the efficiency of recovery of oil from the sand by flooding. The relationship existing between the interfacial tension and percentage oil recovery is well brought out by the graphs of Figure 2, which also indicates the relative value of the various reagents used from the standpoint of flooding efficiency.

The results of these experiments indicate that the strongly alkaline reagents, or those which are dissociated by water to form strongly alkaline solutions, have the property of releasing the adherent oil developed to the highest degree. Sodium hydrate is probably the most effective of all of the reagents used, but due to its rapid consumption through its reaction with silica, it gives a somewhat lower over-all recovery throughout the 16-inch length of a flooding tube than sodium carbonate or sodium silicate, which offer a higher degree of "protective alkalinity." The acids and acid salts are found to be less effective than the alkaline salts, but all assist flooding to some extent: that is, a better recovery is effected through their use than is possible with distilled water. It is noteworthy that sodium chloride, a reagent commonly present in oil-field ground waters, and sodium bicarbonate, a product formed by the reaction of sodium carbonate on silica, are the least effective of all of the reagents tried.

While the interfacial tension between the oil and flood water has an important influence in determining the efficiency of

(Continued on page 46)

Seminole Development Activity Decline Checked

Development of wildcat area south of Little River together with general revival in other parts causes increase in active wells

By WALLACE DAVIS
Staff Representative

TULSA—Revival of activity south of Little River, in the "Seven-Six" sector of Greater Seminole's Wilcox area, following new plans for operating drawn up by Umpire Ray Collins and accepted by operators late in February, has considerably changed the trend of things in a single week. The long period of decline in activity was checked last week, and an increase of 10 operations is noted, bringing the total of active locations in the territory to 104 on March 1.

Fifteen locations started preparations for drilling last week, including nine test wells which are permitted by the agreement to co-operatively wildcat the region under restriction, and six additional locations offsetting two producers south of Little River; namely, Snowden & McSweeney's Tiger 1, in the northwest corner of section 13, and Independent's Harris 1, in the southwest of the northwest of the northwest of section 23. Further activity is in progress between this restricted area and Little River pool proper, principally around the Carter Oil Company's Jackson 1, a producer in the northeast of the northwest of the northeast of section 11, a short extension south of the pool.

The nine test wells which have been named to drill at intervals through the potential producing area south of Little River field, and which are beginning operations, are as follows:

Carter Oil Company, in the northeast of the northwest of the southwest of section 12-7-6.

Gypsy Oil Company, in the northwest of the southwest of the southeast of section 11.

Prairie Oil & Gas Company, in the southwest of the southeast of section 12.

T. B. Slick, in the northeast of the southeast of the northeast of section 15.

Sinclair Oil & Gas Company, in the northwest of the southwest of the northeast of section 14.

Reiter-Foster Oil Company, in the southeast of the northwest of the southwest of section 14.

Gypsy Oil Company, in the northeast of the southeast of section 14.

Roxana Petroleum Corporation, in the northeast of the northwest of section 23.

Independent Oil & Gas Company, in the southeast of the northwest of section 23.

Carter Oil Company, in the northwest corner of section 24.

That the area south of Little River has a better probability for major production than has been generally considered is indicated by the performance of the two wildcat producers which were opened March 1 for maximum flows. Snowden & McSweeney's Tiger 1 swabbed 495 barrels from the top of the Wilcox sand March 1 in 20 hours when opened, with the pay at 4315 feet. There was no cut in the oil, but the hole had 50 feet of water, which likely was from the Simpson formation. After deepening to 4317½ feet the following day the well flowed and swabbed 605 barrels. Deepening was continued until Sunday, reaching 4325 feet, and production on that day was 3510 barrels, showing 1 per cent b.s. Independent's Harris 1 wildcat producer flowed 2064 barrels March 2.

Drilling Activity

Activity under way in the territory for development south of Little River was reported as follows at the close of the past week: Gypsy Oil Company was building a rig for Denmark 1, in the northwest of the southwest of the southeast of section 11-7-6. Gypsy had a rig on the ground for Renton 3, in the southwest of the northeast of the northeast of section 11, offsetting Carter's Jackson 1 producer to the southeast. Gypsy was building a rig for Hotulke 1, in the northeast of the southeast of section 14. Gypsy has a rig on the ground for Canard 1, in the southeast of the northeast of the northeast of section 22-7-6. The Texas Company was building a rig for Hotulke 1, in the northwest of the southwest of the northwest of section 23. Independent was moving in rig for Hotulke 5, in the southeast of the northwest of section 23. Mid-Continent Petroleum Corporation was building a rig for Bruner 1, in the southeast corner of section 11. Carter Oil Company has rig on ground for Wilson 1, in the southwest corner of section 12, and was building a rig for Larner 1, in the northwest corner of section 24. Roxana was digging cellar for Hotulke 1, in the northeast of the northwest of section 23.

Carter Oil Company's Jackson 1 producer, in the northeast of the northwest of the northeast of section 11-7-6, flowed 405 barrels on gas in six hours when opened March 1. In the Maud area, six miles west of Bowlegs, Barnsdall's Fife 1, in the northeast of the northwest of section 14-8-5, flowed 350 barrels in eight hours March 1.

Magnolia's Dixon 1, in the southwest corner of section 31-8-7, just northeast of Little River's production boundary, pumped 30 barrels in 10 hours March 2, showing no water, after plugging back from 4191 to 4189 feet, shutting off water in the hole. Carter's Smith 1, in the southwest corner of section 7-8-7, was running five-inch casing March 3, after topping the Wilcox at 4292 feet, reaching the base at 4362 feet and getting a total depth of 4367 feet.

In the Maud area opened for Wilcox production by Barnsdall's Fife 1, The Texas Company's Reed 1, located in the southwest of section 12-8-5, topped the Viola early last week at 4610 feet, showing this formation 447 feet lower structurally than the Barnsdall well, nearly two miles west. Six-inch casing was being set at 4618 feet.

Seminole

The outstanding discovery in the older Seminole area during the week was made in Atlantic Oil Producing Company's Foreman 1, in the northwest of the southwest of the northwest of section 18-9-5, one and a quarter miles west of the southwest edge of Earlsboro pool. The Hunton lime was topped at 4244 feet and the Sylvan shale at 4275 feet. At a total depth of 4280 feet the well swabbed 215 barrels in 10 hours March 2. Work of plugging off the Sylvan, due to caving, was under way, and the hole was being plugged back to the top of the Sylvan with chat.

Magnolia's Hammond 3, in the southwest of the northwest of the northeast of section 10-8-6, the north edge of Bowlegs production, swabbed 168 barrels in six hours March 2 after being shot with 30 quarts. It offsets Sinclair's Taylor 1 two locations to the west, a well which initially made 2082 barrels from 4138-62 feet, and is a north offset to Sinclair's Cumsey 3, which made 2705 barrels from 4090-4125 feet. Depth of the Hammond 1 is 4435-52 feet, 17 feet in the Wilcox.

The long period of decline in Seminole area production is destined to be checked by Little River from indications offered in the strength of the two southern wildcat producers; that is, this additional oil added to new flush in small amounts from the other pools. If these wells serve to check the decline for a period of 45 days then production from the new locations will be ready to fall in line in the event of success. And success of drilling in some of the many cases is practically a cinch, considering that nine offset locations are now going down around present producers. Evidence of the check

is seen in production for March 4 and 5, as compared with the low mark of 302,259 barrels for March 3. Figures for the gauges of Sunday and Monday morning for production of the previous days are as follows:

	Mar. 3	Mar. 4	Mar. 5
Little River	35,940	38,523	38,942
Bowlegs	86,624	87,370	84,608
Earlsboro	105,131	108,769	107,973
Seminole City	56,123	55,887	55,332
Searight	18,441	17,817	18,365
Maud	.....	100	100
Total	302,259	308,466	305,320

A total of 1087 wells were producing March 5, giving the fields a well average of 280 barrels. At the present rate of plugging small producers in the area considerable drilling will be necessary to run the total number of producing wells at one time to more than 1100. Many of the wells being plugged are making sufficient oil to be considered good wells in shallower fields, but are not considered capable of paying off with present producing methods at Seminole. It is likely that some of these wells will simply be taken temporarily off production and efforts made to make them pay later through new methods or by deepening.

Of the total of 104 operations in the five fields last week Bowlegs led with 33, Little River had 27, Earlsboro had 26 and Searight had eight. There were no wells drilling in the old Seminole field. There were seven locations, 67 wells drilling, 12 rigs up and eight operations shut down. This report fails to include much of the work begun during the week.

Pottawatomie County

Magnolia's School Land 77, located in the northeast of the southwest of section 36-7-3, Pearson field, topped the Viola at 4285 feet, and at a total depth of 4295 feet flowed 450 barrels in 12 hours, 38 gravity crude, March 2. Mid-Continent and McCullouch's Smith 1, a producer of two weeks, near the old St. Louis pool, in the northwest of the southeast of section 25-7-4, swabbed 400 barrels March 2 after deepening from 4165 to 4171 feet, still in the Simpson sand. It produced only 250 barrels three days before deepening.

Magnolia's Crawford 1, in the northeast of the southeast of the southwest of section 25-7-3, swabbed 79 barrels, cutting 3 per cent water, late last week. Magnolia's Harper 1, a diagonal offset to the Crawford and an offset to I. T. I. O.'s Viola lime producer at Pearson, continued to decline, falling from 266 barrels to 84 barrels late in the week. The Sullivan 1 declined from 2303 barrels to 1059 barrels in a single day early in the week, dropped to 514 barrels late in the week, cutting 6 per cent water. An increase of water and weakening of production in these Viola lime wells have gone far toward condemning this pay in and around the old area south of Maud.

Logan County

Roxana Petroleum Corporation's new deep producer in Logan County, Freelove 1, in the southwest corner of section 17-19-4, showed an increase of 146 barrels March 1 to 2188 barrels when deepened three feet to 6095 feet. McCully 1, deep discovery well of the Wilcox in Logan County, which has been producing continually since late in June, 1927, is still making approximately 2000 barrels with no show of water. It is located in the southwest of the northeast of the southeast of section 30, more than one and one-half miles south and slightly west of the Freelove extension well. Roxana's deepest drilling well in the area now is around 5450 feet, several weeks' time above the pay sand.

Osage Reserve Well Makes 1070 Barrels

Tulsa—Kay County Gas Company's No. 2 wildcat discovery on the U. S. Naval Reserve in the Osage, located in the northeast of the southwest of section 22-24-7, flowed 1070 barrels March 1 from its total depth of 2899 feet in silicious lime just under the Wilcox sand. The well at that time had 90 pounds of back pressure on it. The oil tests 35 gravity, corrected. The same company's No. 3, located in the southwest of the southeast of the southeast of section 9-23-7, Osage County, was making between 150 and 200 barrels while drilling March 1 at 2989 feet. The pay in this hole was topped at 2944 feet. It is expected to make a big well, and storage tanks were being erected at that time.

Kewanee Oil & Gas Company's No. 4, in the northeast of the southeast of the northeast of section 28-27-6, Burbank extension, flowed 42 barrels an hour February 29 from pay topped at 2906 feet and drilled to 2972 feet. All of this company's locations on this tract, the northeast quarter of section 28, for which $405,000 was paid at the Osage sale December 12, 1928, are in except No. 9, which late last week was below 1550 feet.

No. 7 made 750 barrels from 2920-95 feet with a total depth of 3008 feet. No. 8 was a 500 barrel producer from 2810-2987 feet, and No. 3 made 100 barrels initial from 2890-2952 feet. It was cleaning out March 1 after being shot with 110 quarts of nitro.

Prairie Oil & Gas Company's No. 6, in the southwest corner of Section 17-27-6, made 50 barrels from sand at 2900-65 feet after a 15-quart shot. Carter Oil Company's No. 2, in the southeast of section 3-26-6, was recovering tools late last week slightly below 2800 feet after finding a good oil showing at 2760-75 feet.

Bill Makes Radical Changes in Handling Naval Reserves

Washington—A new federal policy for the administration of the naval oil reserves of the United States government is set out in a bill introduced in the House of Representatives by Chairman Butler, of the House Naval Affairs Committee. While containing provisions substantially re-enacting the act of congress of June 4, 1920, turning over to the Secretary of the Navy for care, custody and operation the naval oil reserves which later fell into the hands of the Doherty and Sinclair groups, it is proposed to incorporate in the new law a number of innovations of a very important character.

There will here be definitely stated the future policy of the government in regard to the petroleum and oil shale reserves and provision will be made for setting up a reserve money fund with a statement of its purposes. And it will also be provided that the Secretary of the Navy may proceed to have refined the oil taken from the naval reserves, constituting a grant of authority not now vested in that official.

An interesting feature of the proposed new law is that which establishes what will be termed the naval petroleum reserve fund to which from time to time the congress will be asked to make contributions from the moneys received by way of royalty oils taken from the reserves. All such funds now are immediately conveyed into the treasury department.

It is said that the navy department has in view a number of proposals requiring the advancement of funds by congress which, under the proposed law, would be taken care of out of the suggested reserve fund. For instance there is the matter of the completion of the program for the construction of storage tanks, such as undertaken at Honolulu by the Doheny interests in agreement with the Department of the Interior and the Navy and which tanks have since been acquired by the government. Then there is certain development work which is undertaken by the Navy Department and the proposed fund would also be drawn on to meet the expenses of the inspectors in California and at Casper.

Under the terms of the Butler bill, no reserve petroleum products in storage would be permitted to be issued for use except in time of war or of national emergency, or to avoid deterioration. Authority would be given to the secretary to negotiate, with the approval of the president, for the acquisition of certain sections, or parts of sections in Naval Reserve No. 1, now owned by the Standard Oil Company. This company has about six sections in the eastern and central part of these reserves. It is said that these might be acquired either through an outright purchase or an exchange of lands. A tender of oil lands in Naval Reserve No. 2 might be made to the company by the government since in these reserves there are other holders and such a transfer would tend to consolidate the ownership of oil lands in Reserve No. 1.

The Secretary of the Navy now has authority to enter into agreements with private operators for the protection of the government's interests in the oil lands.

PERSONAL MENTION-MEN YOU KNOW

C. R. Harrison, secretary of the Louisiana Oil Refining Corporation, has returned from an extended tour of the Company's Oklahoma producing properties, in the Allen field, Pontotoc County, which trip also included a visit to the cities of Tulsa and Muskogee.

C. O. White of Debeque, Colorado, president of the Washington Shale Oil & Products Company, is spending several weeks in Seattle, Washington, where early this month he attended the annual meeting of his company.

James J. McGraw, a leading figure in Mid-Continent oil, died at St. Joseph's Hospital, Hot Springs, Arkansas, Saturday, March 2, following an illness of a few days which was climaxed by an emergency operation for acute indigestion two days before his death. He was president of the Exchange National Bank of Tulsa, and was recently elected to the board of directors of Sinclair Consolidated. He was a brother of Henry McGraw, vice president of the Gypsy Oil Company. Mr. McGraw was born at Leavenworth, Kansas, August 21, 1874.

Dr. Justus H. Cline, chief geologist for Tom C. Johnson, Kansas independent operator, of Wichita, Kansas, for the past two years, has resigned recently, and will return to his old Virginia plantation home. He came to the Mid-Continent territory as geologist with the Dutch Shell interests, and later joined the Derby Oil Company, maintaining headquarters at Wichita.

Dr. George Otis Smith, newly-elected president of American Institute of Mining and Metallurgical Engineers, and for 21 years director of the United States Geological Survey, will deliver the 1928 commencement address at the Colorado School of Mines on May 18.

Max West, former center fielder for the Waco baseball club, who has been bought by the Brooklyn Dodgers, was in Houston last week visiting his brother, Rex West, assistant to the general superintendent of the Houston Pipe Line Company. Max is on his way to the spring training camp of the Dodgers. During the winter he has been with the Magnolia Gas Company.

R. J. White, district manager, Allen Oklahoma, field, for the Louisiana Oil Refining Corporation, has recently moved from Shreveport, where the company's general offices are located, to the Allen, Oklahoma, field, at which p'ace he is now situated in a company owned dwelling in the field. This move was made in order to more closely supervise the company's development work in this part of the state. Mr. White's mother accompanied him and is now located with him in their new home.

J. H. MOOK
Chairman of the Board, Mook Oil Company, Fort Worth. (Independent Press Photo.)

B. H. Barnes, Mid-Continent manager of the Regan Sales Company, is on a business trip to the factory at San Pedro, California.

Hugh C. White, who has been in charge for Frick-Reid Supply Company in San Antonio, has been transferred to the Shreveport office of the company.

M. E. Wilson, manager of the producing division of the Louisiana Oil Refining Corporation, Shreveport, has returned from a visit in the Allen, Oklahoma field, where the Company has recently conducted quite an extensive drilling campaign.

E. F. Miller, formerly geologist for the Marland Oil Company of Colorado, is now in charge of geological work for the Reiter-Foster Oil Corporation, Tulsa. He is now visiting all of the active counties in North Texas.

L. F. Smith, Tulsa, manager for Whealton & Townsend, Inc:, and Mr. Whealton, of California, were visiting their Houston office last week.

C. J. Lockett of Dallas, Texas, western representative of International Derrick & Equipment Company, was in Casper this week en route to Cody and the Oregon Basin field. Mr. Lockett has recently been seriously ill with pneumonia at his home in Ohio.

S. W. Mascho of Findlay, Ohio, secretary and general manager of Eastern Torpedo Company of Ohio, was in Casper and Denver for a time this month. He visited Tulsa and other points in the Mid-Continent on his return trip to his Findlay offices.

B. P. Crittenden, vice-president, in company with C. R. Harrison, secretary of the Louisiana Oil Refining Corporation, Shreveport, have recently returned from an inspection trip of the company's producing properties in the Urania field, in LaSalle Parish, Louisiana.

L. D. Cain, production superintendent of the Louisiana Oil Refining Corporation, in charge of the company's producing properties in the Eastland and Brown County fields, Texas, was a recent visitor to the State capitol, at Austin, in response to a summons to appear before the Railroad Commission in regard to a request to maintain a vacuum on certain of the company's properties in that area.

A. M. Cullum, oil field sales manager for Reading Iron Company, is spending two weeks in Houston.

Lost Springs Development Assumes Boom Proportions

More than 35 wells are drilling following completion of 12 good producers in Central Kansas field

By WALLACE DAVIS
Staff Representative

WICHITA, KANSAS.—The Lost Springs field of Marion County, 70 miles northeast of here and almost exactly in the center of the State, bids fair to hold the attention of producers throughout 1928. Present activity there, which has assumed boom proportions within a month following completion of an extension well more than a mile northeast in January, reflects sharp transition from the quiet, inactive period seen after the discovery well of the vicinity late in 1926. Twelve producers with a well average of 152 barrels have given rise to development now amounting to more than 35 rush operations.

Lost Springs, in its pre-oil days a quiet farming town of less than 500 inhabitants, is undergoing the most rapid drilling rush of any spot in Kansas. And the town is with the operators. Unlike Oxford, where drilling restrictions were raised by ordinance and rigidly enforced within the town limits, Lost Springs is willing to be an oil town, and fast hole is being made all over the west and south parts of the place. There were 12 wells due to reach the pay within the first 10 days this month, development fast enough to put this story with the accompanying map out of date by publication time.

The size of present producers at Lost Springs would indicate that the field is not to attain anything big in production; but it has a profitable outlook. The crude, testing around 37 gravity, is coming from chat formation found from 2350 to 2480 feet, and the drilling time runs little in excess of 30 days. Several wells have been completed in less than a month, actual drilling time. Small standard rigs are being used, and formations to the pay are commonly not hard drilling. Gas pressure is lacking, and completed wells are placed on the pump or swab shortly following completion. Shooting has thus far not been practiced there but experimental shots are expected to be made, prospects for increased production in the tight chat formation being good in the opinion of several operators. Water is showing in some of the wells in the original discovery area, but is not hazardous to production.

Discovery

History of Lost Springs field shows the discovery to have been made by Winters & Harwood, independent Kansas producers, in their Reznicek 1, located in the southwest corner of the northwest quarter of section 22-17-4. It made 30 barrels initial from chat topped at 2373 and drilled 23 feet on December 7, 1826. The well was deepened to 2441 feet April 12, 1927, and made 225 barrels. Greater interest was then manifested generally in the area, and three locations resulted, all turning out to be producers. Prairie Oil & Gas Company got 525 barrels initial in its Mowrer 1, a west offset, June 29, 1927, from chat at 2385-2423 feet. Phillips Petroleum Company's first location, a south offset, made 639 barrels initial yield May 11, and Sinclair got a 380 barrel well offsetting the discovery on the southeast.

After completion of these four wells Lost Springs joined the list of fields entering upon a program of conservation resulting from a weak market, and the latter half of 1927 saw little activity in the new area.

On January 6, 1928, Phillips Petroleum Company purchased the remaining 8/15 of the holdings of Winters and Harwood in the immediate vicinity of the discovery, including their discovery well and 1280 acres of leases, for a consideration amounting to $600,000. This transaction followed on the heels of an extension given the area by Lariaux & Robinson, which resulted in pulling the play more than a mile east and slightly north, into the Lost Springs townsite. The well began showing for a producer in chat at 2355-90 feet, and from chat at 2395-2420 made 140 barrels on January 5. Phillips' entrance into Lost Springs came when F. C. Frank's 7/15 interest in Winters & Harwood's holdings was bought previously. Due to the checkerboarded lease conditions characteristic of townlot acreage, this extension has risen to double the development in the original pool. Lariaux & Robinson are the biggest acreage holders inside the town limits, but there are more than a half dozen other lease holders within an area of less than a quarter section. In the event of the potential productive acreage being closed in between the two fields and widened to any extent, Phillips Petroleum Company is destined to be the big producer, having nearly as great a scope of acreage as the other operators combined.

Prospective Area

That the Lost Springs field might be developed into a wide productive territory is indicated by such a case as Winters & Harwood's Ucker 1, a 25-barrel initial well in the southwest corner of the east half of the southwest quarter of section 2-17-4, more than two miles north and slightly east of the present townsite production edge. It was completed January 10, 1928, from chat at 2388-2449 feet, and is now pumping 12 barrels. Few dry holes have been found in the territory to dispel hopes of a wide range of production. Producers were surprised at the recent failure of Skow Brothers in their Williams 1, located in the northeast of the southwest of section 4. It got a hole full of water in sand at 2612-15 feet with a total depth of 2620 feet after getting an oil show from chat at 2340-2417 feet. Winters & Harwood had a failure in Smith 1, in the northwest of the northeast of the southeast of section 15, January 18, when water took the hole at a total depth of 2439 feet. A show of oil was had from 2385 to the bottom. Winters & Harwood got a dry hole in the northwest of the southwest of the northwest of section 12, getting a hole full of water in sand at 2591-2602 feet after finding oil showing in chat at 2355 to 2400 feet. This test was abandoned June 15, 1927. The first test drilled in the immediate vicinity of Lost Springs was abandoned by Forrester et al January 10, 1921, at 2424 feet. It is located in the northeast corner of the southwest quarter of section 12.

Pipe Lines

Three gathering lines are handling the lost Springs oil. Skelly Oil Company has a double three-inch line running from the townsite pool to a two-car loading rack

Osages Have Producing Oil Wells to Sell

Tulsa—Completion by Kay County Gas Company, Marland subsidiary, of two good oil wells within the past two weeks on the U. S. Naval Reserve, Osage County, is resulting in another Osage sale, the date of which has been given by the Department of the Interior, as March 28-29. Potential production from these two wells is expected to urge strong competitive bidding to result in high bonuses inasmuch as the wells are to be sold with the acreage, Kay County Gas Company owning only the gas rights on the land. No. 3, in the southwest of the southeast of the southeast of section 9-23-7, is considered good for 1500 barrels, while No. 2, in the northeast of the southwest of section 22-24-7, is good for 1000 barrels.

Other leases On Turkey Island, Arkansas River land, will be offered for sale at this auction, land formerly held by the State but now the property of the Osages.

on the Santa Fe Railroad along the north edge of the town. Sinclair is running its own oil and that of several of the independent companies, and Prairie Pipe Line Company has a line taking most of the production in the original pool southeast of town. The comparative small size of wells in the area will probably mean the building of no storage except small tanks for handling temporary flush. Sinclair's main line at Topeka is less than 80 miles northeast while several large lines reaching the Peabody, Ebling and Florence pools are only about 35 miles south.

The newest producer in the field at this writing is Independent Oil & Gas Company's Bevans 1, which produced 15 barrels an hour on the swab from chat at 2427 feet. It is the southernmost well in the field, and is located in the northeast corner of the southeast of the southeast of section 21-17-4, and is a west offset to Phillips Petroleum Company's Reznicek 3, which was nearing the sand late last week.

Following is the production by well in the Lost Springs area as reported March 2:

Phillips Pet. Co.'s Reznicek 1, nw sw 22	177
Wells 1, sw nw 22	39
Peterson 1, nw sw nw 23	159
McCoy 1, se ne ne 22	192
Mowrer 1, sw ne ne 22	40
Prairie O. & G. Co.'s Mowrer 1, se ne 21	175
Sinclair O. & G. Co.'s Bevans 1, ne se 21	142
Braden & McClure's Smith 1, ne ne 22	55
Lariaux et al's Peterson 1, sw nw nw 23	115
Merilatt 1, nw se nw 23	200
Winters & Harwood's Ucker 1, sw ne ne 22	12
Ramsey's No. 1, cen. sw ne ne 22	210
Independent O. & G. Co.'s Bevans 1, ne se se 21	360
Total, 13 wells	1,876

Wildcat Makes Gas

Tulsa—Mid-Continent Petroleum Corporation made an interesting find March 1 in its Harjo 1, in the southeast of the northeast of the northeast of section 14-7-5, two miles west of the western edge of the Allen field, when the well flowed 10,000,000 feet of gas and sprayed a small amount of heavy black oil from the top of sand encountered at 2622 feet. Rock pressure of the well was 1250 feet. It was immediately shut in to await preparations for a test.

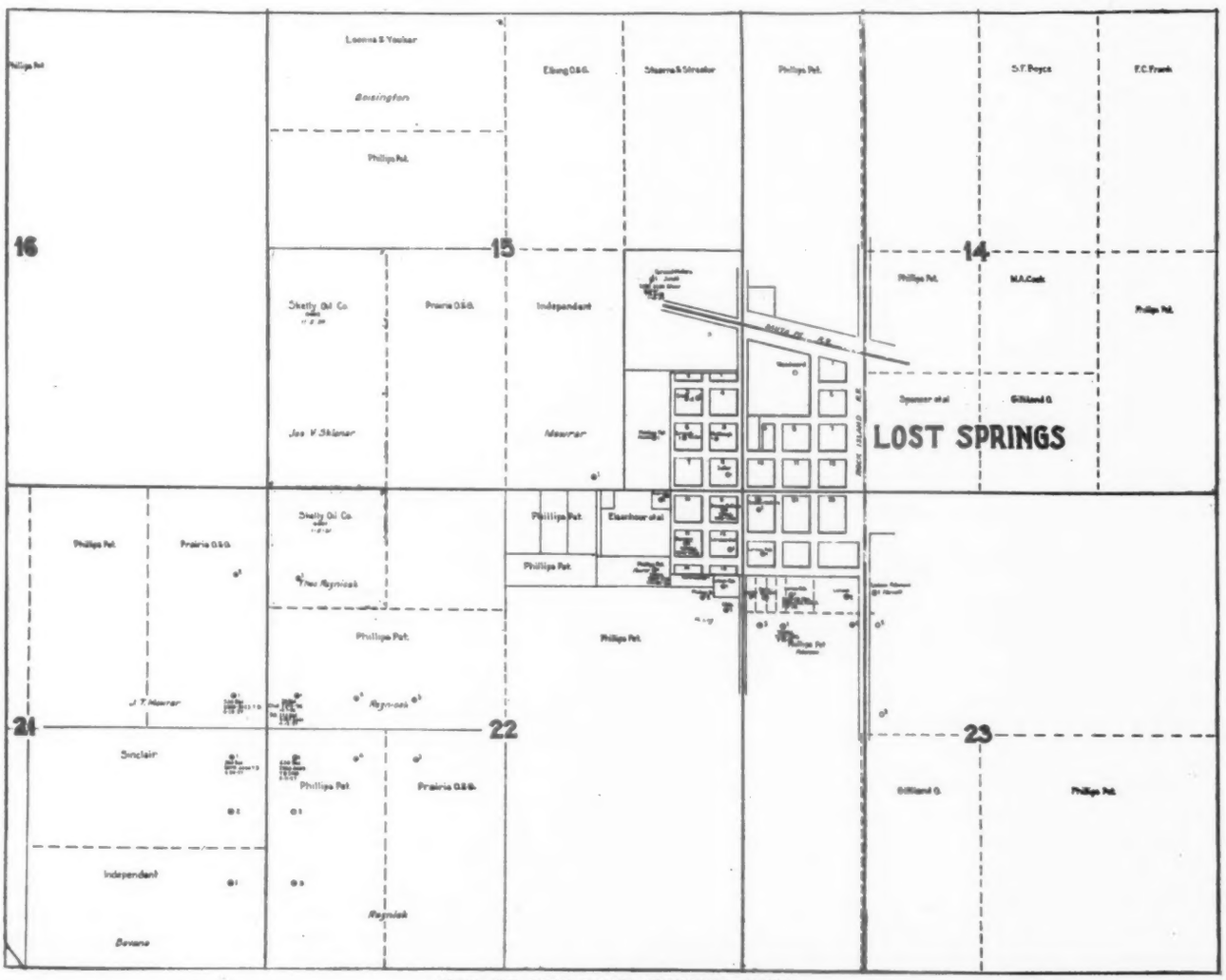
The nearest commercial production is owned by Louisiana Oil & Refining Corporation, located in the northeast of the northeast of section 18-5-8, Seminole County.

Colombia Does Not Seek Oil Land Confiscation

Washington, D. C.—Fears expressed by American oil companies operating in Colombia that their rights to concessions are in danger of confiscation by operation of legislation requiring them to submit their titles to the Colombian government for re-examination are declared by Dr. Enrique Olaya, Colombian minister to the United States, to be without basis. The Colombian government, it was explained, is merely taking necessary precautions to prevent unauthorized exploitation of its mineral resources.

Explanation of the purpose of the law was made following a visit to the State Department of Allen W. Dulles, counsel for the Carib Syndicate and South American Oil Company, who asked the department to request Colombia to set aside the presidential decree making the law effective. It was contended that concessions of American companies might be confiscated if submitted for examination.

It was stated at the Colombian legation that the law was adopted in order that an investigation might be made of rumors that fraudulent titles had been sold to oil companies by Colombians, and that the law does not discriminate against the holdings of American companies.



MAP OF THE LOST SPRINGS AREA

Hendrick Extension Starts Big Offset Campaign

More than 50 wells, 15 of which have been started, expected to follow completion of two producers; wildcat show nine miles northwest

By H. H. KING
Staff Representative

SAN ANGELO, Texas—Two big producers on offset locations extended the Hendrick field, West Texas district, thus requiring the drilling of more than 50 locations, with 15 already under way or authorized. Shortly after this extension was given the field, Gibson and Johnson interests, Abilene, obtained an oil saturated core from lime horizon at the 2700-foot level on their wildcat test drilled about nine miles northwest of the Hendrick field, and a scramble for leases and royalties at fancy prices followed.

The Hendrick field extension was made Thursday night, March 1, when Cranfill and Reynolds' Hendrick 1-C blew in at 2733 feet, estimated at 7000 barrels daily, based on half-hour gauge, and had to be shut in for storage. The well was partially opened Monday and gauged 6900 barrels during the first 12 hours and is now rated good for 15,000 barrels daily, or more.

Atlantic and Collett-O'Keefe's Hendrick 1 "F," a south offset to the above well, was drilled in Monday and flowed 150 barrels of oil per hour with drill stem in the hole, and was allowed to flow 1050 barrels pinched during the first 12 hours. The latter well logged the oil pay at 2740 to 2764 feet, and was drilled 328 feet into the lime horizon.

Cranfill and Reynolds have only 20 acres under lease around their big well. Skelly, Marland and Prairie will become active in the field, as these extensions prove up their leases while the balance of the nearby acreage is owned by leading operators.

Gibson & Johnson's wildcat test on the Lum Daugherty land, located near the center of the southwest quarter of section 3, block 74, School Lands, cored lime at 2687 to 2702 feet, with a surface elevation of 2883 feet, and shut down to buy additional acreage. This wildcat was drilled on contract by Clint Murchison, and an interest in the well is owned by Kessler and Logan. According to reports, Gibson and Johnson only held lease on 160 acres, and sold off half of this when drilling started, but were heavy royalty owners in the general area. Disposal of a portion of their royalty holdings at intervals has more than paid for the cost of the wildcat venture, according to reports, and early this week close in royalty was quoted at $400 base.

Cranfill & Reynolds' extension well to the Hendrick field was delayed in completion for several weeks owing to heavy gas production, and for a week prior to its blowing in as an oil well the crew had pumped water and heavy mud into the hole as a means of drowning the gas. This well cemented 8¼ inch casing at 2408 feet, and developed the first showing of gas at 2435 feet, while the big gas, estimated at 80,000,000 cubic feet with 1350 pounds rock pressure was encountered at 2718-33 feet. A light spray of oil appeared at this depth when the well was shut in to lubricate. The well was opened up Thursday night, March 1, to try and resume drilling when the crew discovered it had drilled itself into an oil well. It gauged at the rate of 7000 barrels daily when given an open flow test for 30 minutes, and then had to be shut in pending the erection of more tankage and connection of pipe lines.

Cranfill & Reynolds have a contract to deliver 5000 barrels of Hendrick field crude daily to the American Petroleum Company, and have been delivering on this contract from their other three wells for about five months. Recently Cranfill & Reynolds arranged for Magnolia Petroleum Company to accept and store their surplus crude production in this field, and for providing this tankage Magnolia is to receive 50 per cent of the oil accepted, thus relieving the former of all tankage expense. Cranfill & Reynolds plan to hold their portion of the oil turned over to Magnolia until an attractive price can be had. Magnolia has arranged for the Atlantic Pipe Line Company to gather and transport all of its Hendrick crude production, purchases and that taken under the storage plan to Midland, where a connection is made with Magnolia Pipe Line Company's West Texas trunk line system and principal tank farm. Atlantic has tied into the Cranfill-Reynolds well with a line.

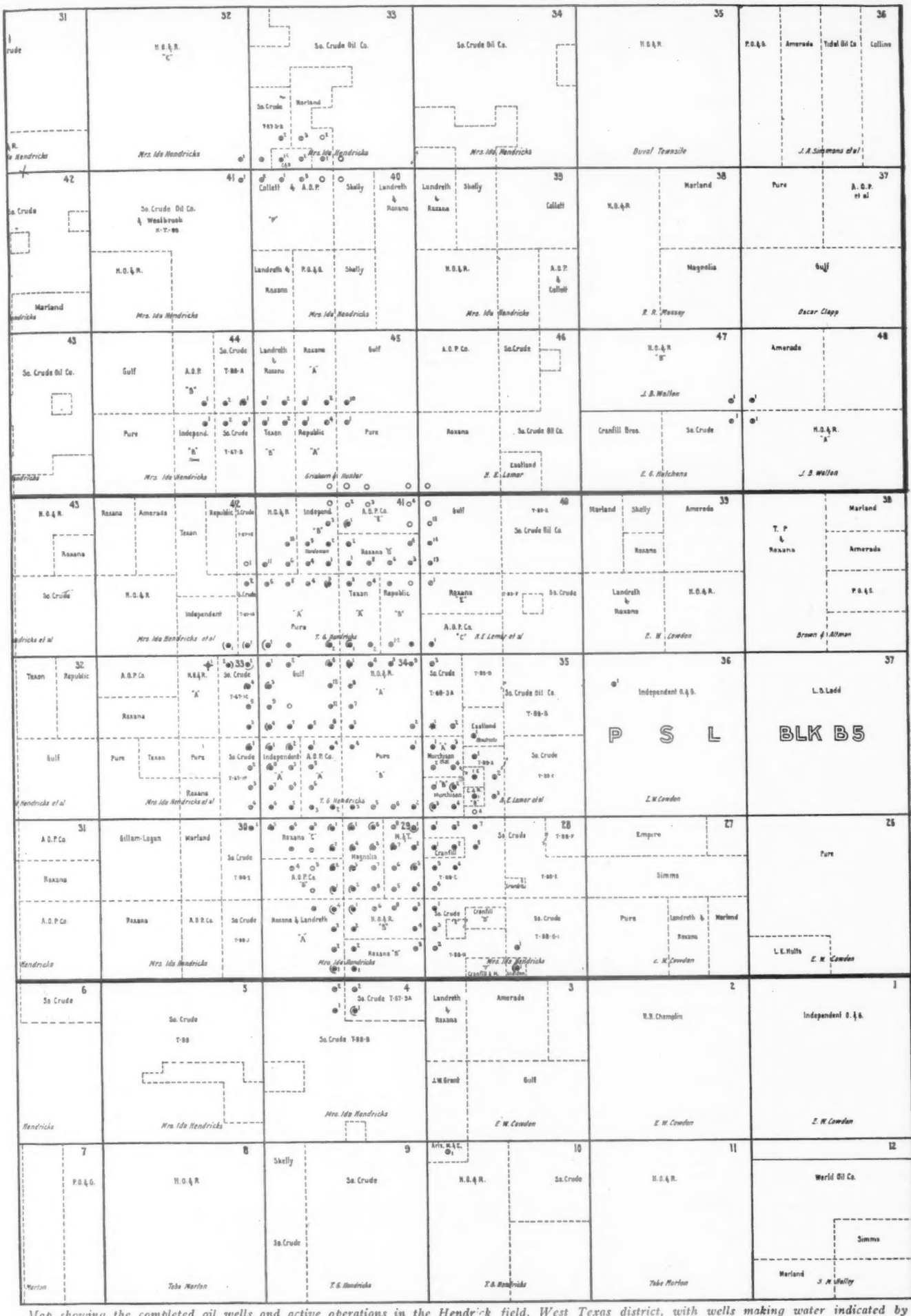
A doubleheader completion was scheduled to be made in extending the Hendrick field to the north, as Atlantic Oil Producing Company & J. D. Collett & O'Keefe's Hendrick 1-F, a south offset to the Cranfill-Reynolds' well, hit the big gas production about the same time. The former interests have been fighting the big gas for one

HENDRICK FIELD OPERATIONS

The status of field operations in the Hendrick field, Winkler County, Texas, at the close of last week is shown below by companies:

Company	Locations and Rigs	Drilling Tests	Tests in Big Lime	Completed Wells	Initial Produc'n	Average Produc'n
Amerada Petroleum Corp.	..	..	1	..	.....	.....
Arizona Mining & Eng. Co.	..	1	..	..	.....	.....
Atlantic Oil Prod. Co.	5	5	3	6	16,450	*13,340
Atlantic & Collett-O'Keefe	1	1	2	..	.....	.....
V. T. Bolin & Company et al	..	1	..	..	.....	.....
Cranfill & Reynolds, Inc. ..	..	1	1	3	11,825	4,345
Eastland Oil Company	..	..	1	..	.....	40
Gulf Production Co.	..	3	4	7	27,135	*12,270
Humble Oil & Ref. Co. ..	6	6	3	6	24,200	*8,550
Independent Oil & Gas Co.	..	5	1	10	57,320	*13,060
Landreth Prod. & Roxana..	1	..	1	5	18,925	*10,985
Magnolia Pet. Co.	..	1	3	4	11,440	3,140
Marland Oil Company	3	..	..	..	.....	.....
Joe Maxwell & Turman ...	..	..	4	4	5,500	4,920
Murchison & Cranfill Bros.	3	..	2	4	6,175	1,060
Pure Oil Company	7	1	6	5	12,395	*4,730
Republic Prod. Co.	2	2	2	2	6,100	8,315
Roxana Pet. Corp.	2	4	2	11	70,970	*16,550
Sehldon & Burden et al ..	..	..	1	..	.....	.....
Skelly Oil Co.	1	..	..	..	.....	.....
Southern Crude & Dixie ..	..	4	8	8	8,310	*2,870
Southern & R. A. Westbrook	3	2	11	8	10,800	*10,010
Texon Oil & Land Co.	1	..	4	2	7,800	*8,010
Totals	35	37	60	85	294,245	122,195
Totals previous week	25	38	63	77	270,455	135,645

*Production partially pinched.



Map showing the completed oil wells and active operations in the Hendrick field, West Texas district, with wells making water indicated by a half circle.

month, and in the meantime have drilled a second location down to the big lime horizon and cemented casing, while work is under way on two more. Cranfill & Reynolds' Hendrick 2-C is also about ready to drill in, having logged the top of the salt at 1825 feet last week, Southern Crude & Dixie Oil Company's Hendrick 1-B-3-T-67, located in the southwest corner of section 33, is also ready to drill in, as 8¼ inch casing has been cemented at 2506 feet. This latter test logged the top of the lime at 2505 feet, with a surface elevation of 2846 feet. The Southern Interests have two more tests under way on this north end, and Marland is rigging up on two of its first three locations, while Humble and Skelly Oil Company are at work on their first three tests.

Gulf Production Company's Hendrick 10, located in the southwest corner of the northeast quarter of section 45, block 26, blew in early Sunday morning after drilling lime pay at 2681-94 feet, and when given a 20-minute open flow test was rated at 435 barrels per hour, with about 50,000,000 cubic feet of gas production. No attempt will be made to carry this hole deeper until production goes off. This well logged the top of the brown lime at 2331 feet with a surface elevation of 2846 feet, and began making oil when carried 363 feet into the lime. Gulf is storing all of its Hendrick field production, which averaged 12,270 barrels daily last week from six wells, in field tankage, and must materially increase its tank program immediately, or build a line.

Daily production in the Hendrick field averaged 122,195 barrels from 92 wells last week, and it was the first loss sustained in many weeks. The drop was due to production jumping ahead of tank building programs of some of the companies, thus causing further pinching of wells, while congestion is also getting worse on tank car movement of crude from the field. Humble is erecting 35 new 55,000 barrel tanks on its Hendrick field farm to supplement 64's now completed and building, and Atlantic purchased 15 new 80's for its Midland farm, instead of ten as reported last week.

The Chalk field district on the Howard-Glasscock County line was extended one-half mile to the west when Sun Oil Company's W. R. Settles 1, located in the southeast corner of section 135, flowed and swabbed 100 barrels of 27.5 gravity oil per hour on four hour test after drilling sandy-lime pay at 2490-2540 feet. This well logged the top of the lime at 2130 feet, with a surface elevation of 2717 feet, and has been shut in as per agreement with other operators in this area, pending a market for the oil. Magnolia's Roberts 2 flowed 2700 barrels of 28 gravity oil during first 22 hours from deep lime pay at 2974-86½ feet.

A second high gravity oil producer for Fisher County was in process of completion early this week when Cranfill-Reynolds & Sun Oil Company's J. A. Young 1, located in northeast part of section 208, block 1, BBB& C survey, filled 2500 feet with 36 gravity oil after drilling 12 feet in lime pay to a total depth of 3118 feet. This well is about 3½ miles northeast of the Texas Company's Stephens 1, which opened the area early in January with an initial production of 280 barrels of 38° gravity oil daily on pump in lime pay at 3238-75 feet, and is still making 200 barrels daily. A market is available for crude produced in this area through The Texas Company's rack line. Casing is being lowered to drill in the Young test, which is logging the lime about 10 feet higher on structure than the discovery well.

Magnolia Adds Stations On West Texas Line

Dallas, Texas—Four main line pump stations are to be added immediately to Magnolia Pipe Line Company's West Texas trunk line system between Midland and De Leon to increase the daily capacity from 18,000 barrels to a maximum of 25,000 barrels. This additional capacity will still be less than half of the total volume of crude traffic available for the line from crude produced and purchased by Magnolia Petroleum Company and from common carrier oil offered by Atlantic Oil Producing Company and Pure Oil Company. The latter two major producers in the Hendrick field, Winkler County, have booked a limited amount of space in Magnolia's trunk line for delivery of crude to the Gulf Coast.

Magnolia's West Texas trunk line consists of a welded eight-inch extending from the Church and Fields area, Crane County, via Midland to De Leon, where a connection is made with the original Panhandle and Central West Texas system, thence via Corsicana to Beaumont. Besides the field station in Crane County, Magnolia has stations at Midland, Iatan, Sweetwater and Clyde, and the four new stations will be located near Morita, Howard County; Colorado, Mitchell County; Merkle, Taylor County, and Cisco, Eastland County. Each of these new stations will be equipped with Prescott and Worthington pumps and electric motors, such being the same type of equipment in the other stations on the West Texas line. All stations are to be completed within six weeks.

The interval between stations on the West Texas pipe line unit will average about 26 miles after these four new stations are completed, and the next move for Magnolia to make in increasing its capacity will be the laying of loops. However, congestion on Magnolia's line out of De Leon and south of Corsicana station will require more capacity being built first. Magnolia is laying 240 miles of 10-inch line parallel to its original trunk lines from Corsicana to Beaumont, but there will be no surplus room between these two points when the new loop is completed, as crude is being backed up in tankage at Corsicana and Mexia pending completion of the 10-inch unit.

Another Shallow Pool in Shackelford County

Albany, Texas—Another shallow oil pool was uncovered in Shackelford County during the past week when L. B. Tannehill, Albany operator, tapped the Cook sand pay at 1140-55 feet with a natural flow of 370 barrels of 39° gravity oil. This wildcat producer is located on the Matthews land, and in the southeast corner of section 34, E. T. Ry. survey. It is about two and one-half miles east of the Cook Ranch field. Skelly Oil Company holds lease on about 300 acres in a solid strip lying between the Tannehill well and the Cook field proper, and has started an offset, while others are being made this week.

Oil Supply Company Buys Big Building

Fort Worth—In order to facilitate its shipping and insure prompt dispatch of its equipment to users, the Fort Worth Well Machinery & Supply Company, Inc., recently bought the James McCord Building here, located at Main and Front Streets. The building is considered one of the most desirable in the entire wholesale district on account of its proximity to the railway depot and the freight and express offices.

For incoming shipments the building is served by trackage on two sides.

Work has been started on reconditioning the building to make it suitable for quick handling of merchandise from all floors and just as soon as this is completed, the stocks of the Fort Worth Well Machinery & Supply Company will be moved in. This stock consists of oil, gas, water and steam supplies.

This company is widely known in the oil fields on account of the famous "Fort Worth Spudders," and other oil field equipment. The company recently acquired the plant, grounds, buildings, etc., of the Fort Worth Drilling Tool Company and purchase of the McCord Building is in line with the expansion policy started when the other plant was bought.

Officials of the company include A. H. Herdman, president; H. G. Parr, secretary and general manager, and W. B. Brown, vice president.

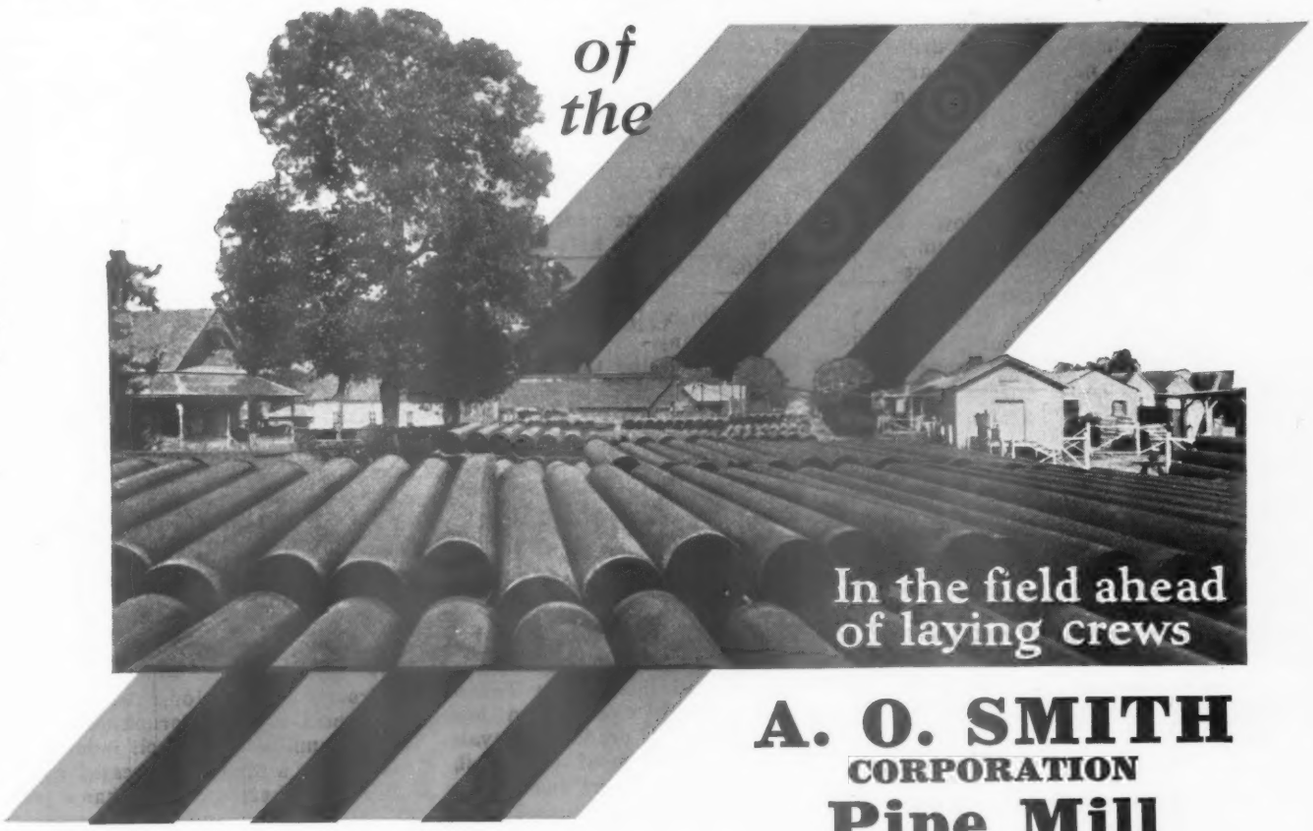
Prairie Shipments

Tulsa—The Prairie Pipe Line Company shipped 5,006,573.20 barrels of crude during February, a daily average of 172,640 barrels for the month.

Tulsa—Roxana Petroleum Corporation's Emrich 10, in the south side of the Oxford field, Sumner County, Kansas, made 710 barrels on the swab March 1, finding the Stalnaker sand at 2015 feet and penetrating nearly 100 feet.

CAPACITY

of the



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Wildcat Strikes Stimulate Work In North Texas District

WICHITA FALLS, TEXAS—A series of wildcat strikes made within the past few weeks in Archer, Young and Wilbarger Counties is having a stimulating effect on drilling operations on nearby leases, and new work is also on the increase in older sections of the North Texas district because of operators anticipating additional price boosts on higher gravities.

The discovery of a rich shallow oil sand in Northeastern Young County about the middle of February has revived wildcatting in this general section, and a sizeable drilling campaign is being launched in the pool proper because of unusually large pumpers being brought in from the 500-foot pay. The Pennell Oil Company's Boone 1, located in the northwest corner of section 1, BBB&C Ry. survey, Abstract 34, and several miles northwest of the town of Loving, started the shallow play with an initial production of 225 barrels of oil during first 24 hour test on pump from sand at 504-15 feet, and pumped 200 barrels on the second day. Since completion of this well, J. C. Cunningham et al's Hawkins' 1, located in northeast corner of 40-acre lease section 1914, TE&L survey, registered an initial production of 240 barrels on pump from sand at 506-13 feet, and Wooten & Reed, Graham operators, scored a similar sized pumper at 504-18 feet from the first well drilled on the McKinley 25-acre lease, which was later sold to the Allday Oil Corporation for a reported consideration of $60,000. The Allday Corporation has completed three pumpers on its Johnson lease, including a 150 barrel pumper at 566-83 feet. Most of the close in acreage in this pool was held by citizens of Loving when the strike was first made.

D. O. Johnson and associates uncovered a new oil pool on the L. F. Wilson ranch in Archer County last week when their Wilson 1-B, located in southeast corner of lot 19, Geraldine Townsite sub-division, swabbed at the rate of 350 barrels daily from sand at 1554-70 feet, and a number of nearby locations have since been staked.

The Waggoner Ranch in Wilbarger County has contributed another new oil producing area, and a semi-wildcat producer. The Texas Company's Waggoner 1-D, located at the center of the north half of section 43, MEP&P Ry. survey and several miles from production, swabbed 130 barrels oil during first 24 hour test after drilling sand pay at 2356-75 feet. The nearest production lies to the southeast on the Ancell ranch, straddling the Wichita-Wilbarger County line. Fain-McGaha Oil Corporation's Waggoner 1-0, located in the northwest quarter of section 50, block 14, H. & T. C. survey, is showing for a 40-barrel pumper from shallow sand uncovered at 1288-95 feet, and extends Wilbarger County production about one mile to the west.

In Haskell County, S. S. Kouri & Healdton Oil & Gas Company's wildcat test on the T. Newcomb land, section 4, H&TC survey, block 3, is bailing several barrels of live oil with water from sandy-lime pay at 1637-43 feet while cleaning out hole at a total depth of 1680 feet.

San Luis Obispo, Calif.—The Richfield Oil Company will not abandon its wildcat test on the Carissa plains, section 10-29-17, as announced last week, but will merely suspend operations. Richfield, however, has taken over the Miley test on section 15-29-17 and will deepen the well from 2540 feet. These wells are located in an isolated section of the county and far from the nearest production.

Brawley, Calif.—The Imperial Valley Petroleum Company, recently organized by Brawley interests, has obtained leases on more than 20,000 acres lying along the western fringe of the Imperial Valley and will drill a rotary test in the Barreto district. Two wells have been drilled in the immediate district and both encountered oil and gas showings.

Delano Deep Test

Bakersfield, Calif.—The North American Consolidated Oil Company has encountered a good gas showing at 4100 feet in Wallace 1, a deep test near Delano. No test was made and the well is now drilling at 4175 feet. The company has extensive holdings near the well.

Texas Commission Calls Meeting On Curtailment Move

Austin, Texas.—With the hope of relieving the "greatly distressed condition" of the oil industry in Texas, the State Railroad Commission has called a conference of producers, royalty owners, purchasers of crude oil, pipe line operators, refiners and others, to be held here at the capitol at 9 o'clock Saturday morning, March 10. Prior to the calling of the meeting, the commission, composed of Chairman Clarence E. Gilmore, C. V. Terrell and Lon A. Smith, had been asked by Governor Dan Moody to take some action toward ameliorating the oil situation.

That it is the purpose of the commission to work out some means of curtailing production was indicated in the statement which it addressed to the oil industry of the State, and which read in part as follows:

"The railroad commission is charged with the enforcement of the oil and gas conservation laws of the State, and to that end is authorized to make and enforce such rules and regulations as will effect that purpose."

Elsewhere in the statement, expressing the probability of immediate and commanding action, is the assertion that "we are not only anxious to render constructive assistance, but we are willing to take such action as we can under the law to remedy as far as possible the existing conditions."

In the meeting here Saturday, through which the commission hopes to ascertain the desires of those interested in the industry, there will be discussions of the exact situation existing in the State, and of the necessary remedies and the methods of applying them.

Further assertions of the Railroad Commission in calling the meeting were as follows:

"From oil trade journals, the daily press and personal information coming to the commission, the oil industry in Texas is in a greatly distressed condition and has been for more than a year. The practically unanimous judgment of all concerned is that this condition is the result of overproduction of crude oil beginning with the bringing in of the Seminole field in Oklahoma more than a year ago and augmented by the addition of the Yates, Hendrick and other pools in West Texas. Prices in crude oil have steadily declined as the flush production has gone on the market.

"The decline in oil prices has not only brought financial distress to all, but has meant financial ruin to many of the smaller operators, and will mean the ruin of many more. It has meant and still means the loss of untold millions to the University of Texas and to the State public school fund, because of decreased royalty payments from school lands.

"Additional storage is being built by large and small companies at great economic waste.

"In Texas, many wells are pinched in, and if all were permitted to flow full capacity, the production would be greatly increased, probably doubled. In the face of this situation, however, the drilling in of new wells and the extension of proven fields continues almost unabated."

Besides the ruin of small operators and reduction of school royalties, the overproduction "means the waste of this natural resource that never can be replaced," the commission said.

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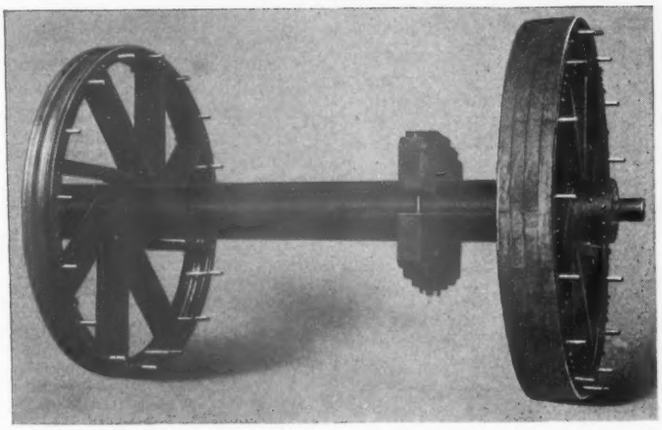

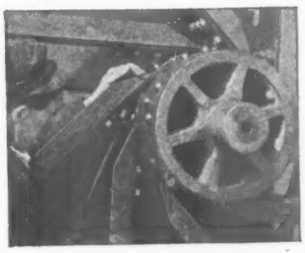

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Recovery From Unconsolidated Sands By Water Flooding

(Continued from page 34)

recovery, it is probable that chemical reaction of the dissolved salt on the silica, of which most sands are primarily composed, is of greater importance in releasing the adherent oil. Reaction of the flooding agent with the silica of the sand, reduces the interfacial tension between the mineral and the flood water, increases the wetting power of the flood-water for the mineral, and thus promotes release of the oil. We have no means of measuring solid liquid interfacial tensions, but they are thought to be generally higher than liquid interfacial tensions. When the solid dissolves in the liquid, we know that the interfacial force must be approximately zero—hence, an important change in interfacial tension relationships tending to release the oil is indicated, though we cannot quantitatively measure its influence. It is found on inspection that the reagents giving the higher efficiencies are also those which are strongly ionized and react with silica. The following chemical reactions are typical of those which occur:

Na_2CO_3 SiO_2 $NaOH$ $NaHCO_3$ $NaHSiO_3$ $NaHCO_3$.

$NaOH$ SiO_2 $NaHSiO_3$.

$Na_2B_4O_7$ SiO_2 $NaOH$ $NaHB_4O_7$ $NaHSiO_3$ $NaHCO_3$.

Na_2SiO_3 $2SiO_2$ $NaOH$ H_2SiO_3 $2SiO_2$ $NaHSiO_3$ $H2SiO_3$.

Water, H_2O, is supposed to be in contact with the reagents in each of the above reactions.

Inspection of the recoveries indicated in the graphs of Figure 2, shows that the alkaline salts are more effective than the strongly acid salts, the latter being scarcely more effective than pure water. Divalent salts of the weak acids however, are effective after hydrolzing, but univalent salts of the weak acids are less effective. Neutral sales have little if any effect. The probable reason for the lower efficiency of the acidic solutions is found in the fact that the silica dissolves less readily in acids than in alkalis.

Effect of Changing Texture of Sand on Efficiency of Water Flooding

It has been shown that fine-grained sands and less porous sands offer greater resistance to the passage of fluids than relatively coarse-grained and more porous sands. In nature, sand strata of uniform texture extending over great areas are uncommon. Generally, lenticular bodies of finer or coarser material will be included within the oil-bearing stratum, as a result of cross-bedding or other irregularities of deposition. Clay or shale partings, which are almost impervious to the passage of fluids, may be deposited between various component strata of the reservoir sand, thus to a considerable degree restricting free passage of oil, gas and water. It is logical to expect that such conditions may have an important influence in limiting the percentage recovery possible by water-flooding under field conditions.

Several experiments were performed to secure some measure of the quantitative effect of variable sand texture. Three different flooding tubes were prepared, one of which contained equal proportions of 20-28 mesh, 40-48 mesh, and 60-65 mesh sand, all thoroughly mixed. Another was filled with alternating layers one inch thick, of the three sand sizes, while the third tube was entirely filled with 40-48 mesh sand. The sands in the three tubes were saturated with 24 degree oil (oil No. 2) and then flooded with a one-twentieth normal solution of sodium carbonate. Table 5 gives the results:

Table 5.—Experiments to Determine Effect of Mixed and Stratified Sands of Variable grain size on Flooding Efficiency.

Size and condition of sand	Average Porosity Percent	Percentage Recovery
Equal volume of 20-28, 40-48 and 60-65 mesh sands, thoroughly mixed	35.9	44.2
Alternating layers of 20-28, 40-48 and 60-65 mesh sands	35.6	48.4
All 40-48 mesh sand, well compacted	37.0	54.8

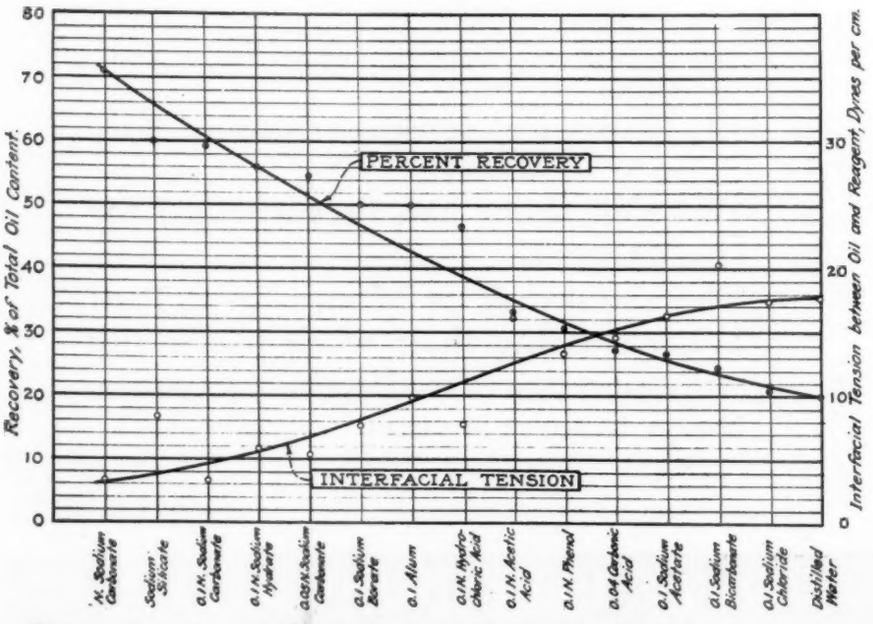

Figure 2 Comparison of percentage recovery with interfacial tension between oil and flooding reagents.

While the over-all recoveries obtained in these tests did not vary greatly, visual inspection of the tubes after flooding, indicated that the flooding effect was quite irregular in the first of the three experiments in which the mixture of the sands of different grain size was used; while in the case of the stratified sands of different sizes, the oil tended to accumulate—i.e., recovery was less complete—where it was necessary for the oil to pass from a layer of coarse sand into one of finer texture. It seems clear that variable texture of sand grains results in a reduction of flooding efficiency, in comparison with what is possible in sands of uniform grain size.

Effect of the Time Element on Efficiency of Water Flooding

The rate at which the flood water advances through the sand has an important influence on the efficiency of recovery by water-flooding. Physical and chemical reactions do not come to equilibrium instantaneously. Where one liquid replaces another by a process of readjustment in interfacial tensions, the process is necessarily a slow one. If it is hastened by artificial means, a lower recovery than would otherwise be possible, is like to ensue.

One method by which the flow of water into an oil-saturated sand may be hastened, is that of applying additional pressure to the flood-water, and the rate of progress is found to be some function of the pressure applied. Up to a critical point, additional pressure is helpful in securing the ultimate production within a briefer interval of time; but when a rate of advance is attained at which the flooding agent has insufficient time to bring about efficient displacement of the adherent oil, the added pressure becomes uneconomic. It is important in practical flooding operations in the field, to know to what extent the rate of flow of the fluids may be increased without serious loss in efficiency of recovery.

Several experiments were made with various flooding reagents to determine the influence of time on the efficiency of recovery. In some instances, the static head on the flood water was only a few inches; in other cases, a powerful vacuum was applied on the delivery tube to hasten displacement of oil. In practically every case, a reduction in the ultimate recovery resulted through the use of a rapid drive in comparison with recovery in equivalent experiments under low static head. Rapid displacement of the oil also resulted in formation of considerable emulsion in several instances. Table 6 gives the results of experiments planned to determine the relative recoveries by slow and rapid flooding:

Table 6.—Results of Experiments to Determine Influence of Rate of Flooding on Displacement of Oil, using Various Flooding Agents.

Flooding Reagent Used	Percentage Recovery Slow Flooding	Rapid Flooding
Sodium Chloride (0.1 N.)	20.6	8.0
Alum (0.1 N.)	50.0	28.0
Hydrochloric Acid (0.31 N.)	46.6	18.0
Sodium Hydrate (0.1 N.)	56.0	47.0
Sodium Carbonate (0.1 N.)	59.0	42.5

If the greater efficiency of the alkaline flooding agents is due to their chemical

action on silica, as shown in a previous section of this report, it follows that grain coatings not reactive with the flooding agent and preventing its contact with the silica, would tend to reduce the efficiency of flooding. If so, this would seem to be a matter of considerable importance from the practical stand-point, in as much as sands are commonly coated in nature with secondary minerals such as calcium carbonate, iron oxide and various siliceous substances.

In order to determine the effect of such grain coatings, four portions of clean white silica sand of 40-48 mesh, were selected. The first was saturated with oil No. 2 for three months, then partially washed with gasoline and dried over Bunsen burners until a black carbon coating was formed on the sand grains. This coating was hard and vitreous in appearance and was practically insoluble in gasoline. The second portion of sand was saturated with a solution of sodium carbonate and then stirred in a solution of calcium chloride. The excess liquid was then decanted off and the sand washed with water and dried. A thin coating of calcium carbonate on the sand grains resulted. The third portion of sand treated with ferric chloride and ferric hydroxide precipitated on the sand grains by adding sodium hydroxide. After decanting off the excess fluid and washing, the sand was thoroughly dried, thus converting the ferric hydroxide into red oxide of iron. The fourth portion of sand was used without treatment. These four sands were charged into separate flooding tubes, saturated with 24 degree California crude, and flooded with one-twentieth normal sodium carbonate solution. Table 7 gives the percentage recovery obtained in each case. It will be noted that the carbonate and iron oxide-coated sands gave a much lower yield than the pure silica, but that the carbon-coated sand gave a more complete recovery by flooding. The superior recovery with the carbon-coated sand is possibly due to the lesser resistance offered by the smooth, glasslike carbon surfaces, or it may be due to a change in the angles of contact of the water and oil on the sand grain surfaces. The tests indicate that comparatively low recoveries may be expected from oil sands containing secondary lime or iron oxide, in comparison with what is possible from clean silica sands.

Table 7.—Results of Experiments to Determine Influence of Secondary Mineral Grain Coatings on Flooding Efficiency.

Nature of Sand Coating	Percentage Recovery
Carbon Coating	84
Iron-oxide coating	26
Calcium carbonate coating	25
Clean silica sand	59.5

Influence of Gas Bubbles in the Oil on Flooding Efficiency

Observation through the glass walls of the flooding tubes, of gas bubbles occluded within the oil and imprisoned within the sand pores, shows that they impede the progress of the flood water, and often lead to irregular flooding effects, due to inability of the water to displace or flow by them. Such gas bubbles offer considerable resistance to the passage of fluids through the sand, since they must be compressed and expanded at each pore restriction, and energy is consumed in so doing.

When inundated with water, the gas bubbles remaining in the sand seem to retain a film of oil about them, the thickness of which apparently depends chiefly upon the viscosity of the oil. In sands containing many gas bubbles, it seems probable that a large part of the oil unrecoverable by water-flooding is so retained. After inundation with water, if sufficient pressure is applied to cause these bubbles to move, they carry their enclosing oil films with them, and these films appear to have the power of scavenging a certain portion of the adherent oil-left on the sand grains. They may be observed to grow in thickness as the bubbles advance through the sand. It seems probable that the introduction of a fourth element (gas in the form of bubbles) into the three-phase system of water, oil and silica, has the effect of materially altering the interfacial tension relationships that have been shown to apply in the three-phase system; and in the four-phase system, the gas apparently has a powerful attraction for the oil, that may be a determining factor in increasing ultimate oil recovery if the gas can be caused to move.

Conclusions

The experimental data presented in the foregoing sections, would appear to justify the following conclusions:

1. Water-flooding is more effective in coarse-grained sands and in sands of high porosity, than in fine-grained sands or sands of low porosity.

2. Capillarity is not a controlling factor in the process of water-flooding.

3. Variable texture of sand grains results in a reduction of flooding efficiency in comparison with what is possible in sands of uniform grain size.

4. Coatings of secondary minerals on sand grains may influence flooding efficiency to an important degree. Lime and iron oxide coatings are particularly detrimental in this respect.

5. Flooding efficiency decreases markedly as the viscosity of the oil increases.

6. Some oils have higher surface tension than others, but those having the lower tensions can be more effectively displaced from sands by flooding.

7. Temperature influences flooding efficiency, primarily by reason of its effect on the viscosity and surface tension of the oil.

8. A slow rate of advance of the flooding medium through the oil sand, results in greater recovery of oil than is possible by rapid displacement.

9. A definite relationship exists between the interfacial tension of the oil against the flooding medium and the percentage recovery obtained by flooding. The efficiency of flooding increases as this interfacial tension decreases.

10. Certain water-soluble salts, when dissolved in the flood-water, have an important effect in releasing oil held on the sand grains. Experiments made with a variety of different chemical substances in solution in the flood-water, indicate that alkaline salts are more effective than the strongly acid salts, the latter being scarcely more effective than pure water. Divalent salts of the weak acids are effective to a lesser degree, after hydrolyzing, than the alkaline salts, and univalent salts of the weak acids are still less effective. Neutral salts have little if any effect.

11. The alkaline reagents are apparently in every case effective, due to the action of hydroxides produced by hydrolysis of the dissolved salt. The hydroxylion is active in attacking silica, forming acid silicates which are soluble in the flood-water. It is in part due to reduction in the interfacial tension between the flood-water and the mineral of the reservoir sand, as a result of this reaction, that the flooding reagent owes its ability to release the adherent oil.

E. E. Watts, former vice-president and treasurer of the Navarro Oil Company, resigned as an officer of that organization on March 1, in order to devote all his time to his own interests. He is retaining his stock in the Navarro company, however, and will continue to serve as a director.

In the future Mr. Watts will be associated with his two brothers, Sam E. Watts and James L. Watts, in a company which will be incorporated under the laws of Texas under the name of Watts Brothers Oil Company; and will serve as president of the new company. This new organization has already moved into offices in the Second National Bank Building, Houston. Mr. Watts and his associates have some production at Blue Ridge and at Humble; and have considerable acreage in both these fields on which the new company will do extensive drilling, particularly at Blue Ridge, where the holdings include leases on the Blakely and the Scott land in the E. Drew survey.

Sam E. Watts and James L. Watts are both former field superintendents of the Navarro Oil Company; and E. E. Kerr, who will become secretary and treasurer of the Watts Brothers Oil Company, is also a former Navarro Oil Company employee.

E. E. Watts is widely known in the Gulf Coast, having operated extensively as a drilling contractor. He was one of the organizers of Farrish-Watts-Collins, Inc., which was succeeded by the Navarro Oil Company in 1925.

Arthur Lefevre, 64, editor of The Texaco Star, house organ of the Texas Company, died of pneumonia at Houston, Sunday, March 4. He had been with The Texas Company since 1913. Mr. Lefevre was widely known throughout the State, having served as State superintendent of education and having written several books on education. On the day following his death, the flag on the State capitol was lowered at half mast in his honor.

Final Test Shows Carterville Well All Wet

SHREVEPORT, Louisiana.—Failures in the Carterville and Champagnolle fields have again thrown the Louisiana and Arkansas fields into a depressed mood regarding the future possibilities of the areas situated within that domain. The final test of the Palmer Corporation's Robertson well, located in section 26-23-12, Bossier Parish, Carterville district, which resulted in a disappointment as regards the production of the well, together with the failure of several of the tests in the Champagnolle area, of Union County, leads to the belief that this section of the oil country is due a considerable period of prospecting before another oil or gas producing sector is developed.

The Palmer Corporation's Robertson 1, in Section 26-23-12, which came in several days ago as a flowing oil well from 3068 feet, and produced the largest amount of oil of any previous producer in the Carterville field, went rapidly to salt water when tested during the week, and flowed approximately six barrels at each head of about seven minutes each, when bailed at that depth a few days past, fifty per cent salt water. There are now not less than 12 wells in the Carterville field that have gone dead as a result of the encroachment of salt water upon the gas bearing sand, and an equal number of wells that will not feed on the line which has a back-pressure of less than 200 pounds. The future of the Carterville field is now limited unless further drilling in a southeast direction results in the development of a more prolific production.

Several tests in the Champagnolle field, in Union County, during the week reveal that this section is still due a thorough testing before production of any consequence is developed. The failure of the Pure Oil Company's Gregory well in Section 10-17-14, which was dry at 2952 feet, together with the abandonment of E. M. Jones' Crain 3, 4014 feet, lead to the belief that this area will never become a commercial producing field. In addition to these two wells, Simroll et al tested dry at 3010 feet when tested with a patent testing tool during the week. The first well is located due south of Keene and Wolfe's Gregory well, and the Magna Production Company's test wells, in Section 11-17-14, while the Simroll well is situated directly south of the Magnolia and Ohio wells, the discovery wells of the field, which were drilled in Sections 1 and 2, of Township 17, Range 14 South. The Magna Production Company's Rowland 1, Section 14-17-14, is flowing at the rate of 125 barrels of oil through tubing and packer which was set at 2999 feet.

Activity in the Pine Island section of Caddo Parish remained in the background during the week, nothing of importance being reported from that area. The Texas Company abandoned Caddo Mineral Lands, Section 23-21-15, at 3657 feet. The Dixie Oil Company is preparing to test Robertshaw 92, Section 13-21-15, at 4075 feet, while Magnolia Petroleum Company is coring at 4002 feet in Hampton A-8, Section 15-21-15, and has casing set in Robertshaw 22, Section 23-21-15. The Pittsburgh Oil and Development Company tested salt water in Herndon 1, Section 15-21-15, at 4017 feet, as did The Texas Company in Noel B-13, Section 14-21-15, at 3979 feet. The Texas Company has also shut down Raines 19, Section 15-21-15, at 4457 feet. All appearances point to a speedy climax to the exciting period of development work that was brought about by the completion of the Haynes Brother's Murray well in this field during July, 1927. Future drilling will in all probability be classified as wildcat work as the 3600 and 3900 foot structures seem to have been depleted.

The Richland Parish gas field, southeast of the Monroe gas field, continues to lead the Louisiana and Arkansas area in activity. This field has now been developed into one of the largest gas producing fields in the two states, with production of more than a billion cubic feet of gas daily. About 20 drilling rigs are in operation in the field, with indications that this number will continue to operate for a considerable period. The field has been proven over a length of more than 20 miles, about four miles in width, and there is a very good possibility that it will be even farther extended before the final work is completed.

The Humble Oil and Refining Company has abandoned its Bliss and Wetherbee deep test in the Bellevue field, in Section 15-19-11, Bossier Parish, below 5300 feet. This well is the deepest yet drilled in this section of the State where production is found at from 350 to 400 feet, in the Nacatosh sand, and is the deepest well drilled in North Louisiana according to geological information.

Work Gives Decision in Oil Shale Case

Washington. — Secretary Work on February 29 promulgated decision in the Krushnic oil shale case, affecting lands in Utah, Wyoming and Colorado, denying motion for rehearing filed by the mineral claimant. The question involved is whether the applicant for a mineral location made on oil shale lands prior to the enactment of the mineral leasing act, and the repeal of the general mining laws as to shale lands, can obtain a patent under the general mining laws, where he failed for one or more years to perform the annual assessment work upon the claim, a requirement under the mining law.

It is contended by mineral applicants, that the only penalty for failure to do this work would be relocation by some other citizen, and that this could not occur, in view of the repeal of the general mining laws affecting oil shale.

The commissioner of the General land office and the first assistant secretary of the interior, in decisions to which Secretary Work on rehearing adheres, held that in the event of failure to perform this annual assessment work the land reverted to the government and was only subject to disposition under the general leasing law.

For nearly two years questions affecting these oil shale claimants have been before the department. After decisions by the general land office against the claimants, the secretary of the interior held a public hearing more than a year ago at which large numbers of shale claimants and their attorneys appeared and presented their views. Liberalization of the departments' attitude on shale claims was then effected by decision of the secretary. The particular case here involved was twice heard orally by the secretary and at the last hearing full presentation was made orally and through numerous written and printed briefs. The secretary then directed that the entire matter be recommitted to the legal forces of the department and considered anew. Extended consideration was given and the law officers of the department unanimously joined in presenting to the secretary the decision just promulgated.

The question involved is purely one of law and is reviewable by the courts. The Secretary of the Interior, in commenting upon the decision, stated that it expressed the unanimous view of his legal advisers in the General Land Office, and finally by the staff of the solicitor's office, and that under the circumstances he could not rule otherwise. The secertary invites the mineral applicant to institute in a proper court a legal proceeding, by mandamus or otherwise, so that the question of law involved may have final judicial determination.

Receivers' Sale

Wichita Falls, Texas.—Producing, refining and marketing properties of the American Refining Company in North and Central Texas will be offered for sale on May 3, 1928, as result of order issued March 3 in Dallas by Federal District Judge William H. Atwell after application was made by receivers. This concern was placed in receivership August 22, 1927, and the following were named receivers: John W. Hooser, Dallas banker and oil producer; E. H. Eddleman and J. C. Mytinger, Wichita Falls operators.

Long Beach Making Good on Production Threat

Completion of three wells in deep sand and large number nearing production gives promise of big increase

By BRAD MILLS
Staff Representative

LOS ANGELES—With the completion of three good wells during the weeks, the Long Beach field apparently has shaken off the slump of the past month and is again on its way to higher levels. Production hovered around 118,000 barrels for several weeks, but the new initial of 7500 barrels sent it far above that figure. With a cluster of wells drilling below the water shutoff, completions should be numerous during the next few weeks. Production from the deep sand producers has increased to 54,000 barrels—about 42 per cent of the total output—and is expected to exceed the yield from the old wells within two weeks. About 200 wells are drilling in the field and of this number more than 50 are being deepened from the old producing level. It is believed that just before the peak is reached, completions will be registered at the rate of about a dozen per week.

It is interesting to note that the operators are gradually creeping deeper with their completions. Some of the first deep wells were completed between 5800 and 6000 feet, and were considered unusually deep. In several parts of the field, wells are now drilling below 6300 feet, and it is believed that the 6500-foot level will not be an unusual stopping point before the campaign is over. The primary object seems to be to include a portion of the sand not being used by all the neighbors.

The Richfield Oil Company, which has an enviable record in the deep zone, added to its laurels by the completion of Frye 3. The well came in with an initial production of 3800 barrels, but the original cut ran above 30 per cent. It is believed that the flow will show a marked improvement. The well was completed at 6402 feet and is one of the deepest producers in the field. It is located in the east end of the field.

The completion of Brayton 3 by the L. T. Edwards interests proved conclusively that the Lovelady pool is going to do its part in the deep zone. The well was completed at 6404 feet with an initial production of 2800 barrels. The oil was 29.2 gravity and cut less than 2 per cent. The completion of a good well in this immediate area at such an exceptional depth proves that large wells may be expected in any part of the field.

The California Petroleum Corporation did not fare so well in the completion of its Griswold 1-2, which was a 1000-barrel producer at 6261 feet. The crude was 31.4 gravity and very clean. The well is located in the east end of the field.

S. B. Herndon, independent operator, is drilling a deep well in the extreme eastern edge of the field and just outside the producing limits already established in the lower zone. The successful completion of the well would prove a considerable area and add to the value of several leases lying along the eastern fringe of the field.

Seal Beach

The deep sand in the Seal Beach field is again in the limelight. Following the completion of two mediocre wells, the new sand was temporarily regarded as a very questionable formation. After wrestling for several weeks with water on top of the oil sand, Marland has successfully completed Selover 11 with an initial production of 1000 barrels. The well was the third to reach the new sand and was completed in the same order. Total depth was 6600 feet, with about 500 feet of oil sand. The oil was 29 gravity and clean. Selover 11 is a much better producer than either the company's Selover 16 or Richfield's Bonner 1, which were the first wells completed at the new level. The new well materially changes the status of the field, and it is believed that several more wells will be deepened. A production of 1000 barrels at such a depth is not considered an unusual achievement, but the Marland wells have served to arouse the curiosity of other operators. The size is too large to be ignored and too small to get excited about. Selover 16, which was the second deep well completed, is still flowing 900 barrels on the gas lift. George F. Getty, Inc., has stopped drilling at 6500 feet in Alamitos 12, and will probably complete the well within a week. A string of four and three-quarter-inch casing was cemented on top of the oil sand at 6000 feet. Like the Marland and Richfield wells, the Getty test encountered about 500 feet of oil sand. The outcome of this well means much to the operators who are undecided upon deepening wells now producing in the Wasem sand.

Rincon

Rincon operators gradually are working downward in their effort to develop a worthwhile production in the upper body of sand. The Pan-American Petroleum Company has drilled State 2 to 3310 feet and will test about 200 feet of formation cut below 3100 feet. The cores taken from the well showed very little water. Several other wells are drilling below 3000 feet in search of a section of sand free from water.

Potrero still remains in the questionable class, following the failure of the Associated's Cypress 1 to produce satisfactorily from 5407 feet. The well made about seven barrels of oil and 40 barrels of water during the test. A satisfactory water shutoff was obtained with the four and one-quarter-inch casing at 5283 feet, indicating that the sand below the casing did not contain much oil. Pan-American's Connolly 1 is drilling at 4665 feet, having passed the depth at which the Associated found some oil.

The Pacific Eastern Production Company is still testing its discovery well in the new Fruitvale field and will keep it on the beam until all available storage is filled. The production has been about 190 barrels, with no water in evidence.

Round Mountain Extended

The Round Mountain area is fast assuming the appearance of a real oil field. With the completion of Jewett 1, section 29-28-29, the Shell Company has extended the producing limits of the field about two miles. The well was completed at 1640 feet and is producing about 350 barrels of 20 gravity oil. The crude cuts only 2 per cent, indicating that the water trouble encountered in one part of the field may not bother near the top of the structure. The Shell may drill the new well deeper to ascertain the depth of the producing sand. Soon after the Round Mountain field was discovered early last summer, several tests were started on the flanks of the structure. For a time the field promised to be a very small one, since three tests were virtual failures. The Shell's extension insures a producing strip nearly three miles long and about two miles wide. The company is drilling another well on section 29-28-29. The Honolulu Consolidated Oil Company is drilling six wells on sections 18 and 20-28-29, and should complete at least two within the next few weeks. The General Petroleum Corporation has become interested in the field and has located its first test on section 30-28-29, and a little more than a mile from the Elbe discovery well. The St. Helens Petroleum Company, Ltd., has plugged back to 2365 feet in its well on section 13-28-28 and will thoroughly test the first sand cut below the 2000-foot level. The well was originally drilled to 3695 feet, having passed through the upper sand without a test. The sand corresponds to the producing formation on top of the structure.

The Sunset and Midway fields were enlivened during the week by the comple-

tion of a series of good wells. The initial production was far under that of the old days but large enough to offset any further decline from the old wells. The Union Oil Company's Houchin 3, section 10-11-23, was an unusually good completion at 5450 feet, having produced 400 barrels during the initial test. The Honolulu Consolidated Oil Company, one of the oldest operators in the area, completed No. 2, section 8-32-24, with a production of 135 barrels. The well was drilled to 3115 feet, with a string of seven-inch casing on bottom. Standard's No. 99, section 33-31-24, was completed at 4330 feet with an initial production of 125 barrels. The company is drilling two other wells in the immediate district. The fields, as a whole, are very quiet and probably will receive little attention during the year.

Goleta

As much trouble as operators have had in the Goleta field, they are not yet satisfied with what they have accomplished and will drill additional tests during the summer. The Santa Barbara Oil Company plans another well on its Hollister lease, but has not definitely decided upon the exact location. The company already has two producing wells in the field. The Miley interests discovered the field about a year ago but water encroachment practically spoiled later attempts to increase production. The sand is found around 1500 feet and the oil is a very high gravity product. The total production from the field is now less than 500 barrels. The possibility of securing a very light oil at a nominal depth offers a considerable attraction and the operators are not inclined to surrender without a struggle. The Miley interests developed a good production but the wells quickly went to water. The Barnsdall Oil Company of California is trying to make a commercial producer of Edwards 2, the second test drilled in the Goleta extension, about three miles west of the main field. The well has increased its oil flow to about 25 barrels, while the gas has decreased to a million feet. Barnsdall's Edwards 1, which was completed several months ago, supposedly opened up an entirely new extension, but water has been a source of worry since the initial test was made. The two wells drilled in this extension have encountered about the same sands as are found in the main field.

The Settled fields of the Los Angeles basin have only an occasional deep test to attract more than ordinary interest. The George F. Getty interests started a deep test in the Santa Fe Springs field, which caused somewhat of a furore in oil circles. Coming as it did in the face of a concerted effort to conserve the oil supplies of the State, several agencies used their influence to have the well shut down. The chance of encountering a deep sand in the field was not considered especially good, however. The Standard Oil Company's Benedictine 2, the first new well in the Montebello field for some time, has been completed as a 180-barrel producer at 3770 feet. The well is larger than the usual run of completions in the district. The Duncan Drilling Corporation has completed its No. 2 in the Huntington Beach field, with an initial production of only 60 barrels. The well was completed in the shallow sand at 2225 feet. The oil was only 13.5 gravity and cut about 4 per cent. A few scattered wells are being started in various parts of the field. Standard's Thompson 8, a deep test of the Huntington Beach area, has reached a depth of 6140 feet. The well is a very significant test and is being closely watched.

Ventura Production Gains

The Ventura field, which recently attracted fresh attention following the completion of three wells below 7000 feet, passed through a quiet week. Although no completions were reported, production gained several hundred barrels. This was due to the increase registered by several completions, which improved after the mud and water was cleaned from the hole. The Associated's Lloyd 102 is drilling below 7050 feet and should be completed within a few weeks. The well is approaching the recent record depth set by the Shell Company and may establish a new mark. The Bolsa Chica Oil Corporation is not satisfied with the action of Hartman 3 and will deepen the well from 6575 feet. The well is now producing about 250 barrels.

George F. Getty, Inc., maintained his unbroken record of completions in the Kern Front field by finishing McDougal 7 as a 300-barrel producer. The well was completed as 2150 feet. Several other wells are drilling in and near the oil and sand and should be completed within a few weeks.

Minor objections to some phases of the curtailment program outlined by leading operators have cropped out here and there, but generally speaking, the plan has met with the approval of all concerned. In some instances, the land owners are dissatisfied and contend that the cessation of royalty payments would work undue hardships upon them. It has been suggested that the operators pay a certain amount regularly to the original lease holders. In such an event, the amount advanced would be deducted from later royalties paid when the wells are reopened. A slight difference in opinion also exists as to how much light oil should be shut in, as well as where the curtailment may best be placed in effect. The major operators are generally in accord and are especially anxious not to work a hardship upon any concerned. Ventura, Coalinga and certain Kern County fields, probably would be effected first by the curtailment.

Make Second Location

Los Angeles.—The Shell Company is not satisfied with the results in Mission 1, a wildcat test near San Fernando, and has located another well a short distance north of the abandoned test. Oil showings were found in the original well, but the sand did not prove commercial on a production test. Several wells previously had been drilled in the San Fernando Valley, but Shell's Mission 1 developed the most satisfactory showings of any previous test.

Richfield Buys Property At Long Beach

Los Angeles.—With the acquisition of the Acme Petroleum Company's holdings in the Long Beach field, the Richfield Oil Company has considerably strengthened its position in the Long Beach field. Three producing wells with a production of less than 1000 barrels are located on the Acme property, which lies north of Richfield's Bernstein lease. One of the wells has been reconditioned and it may not be necessary to deepen any one of the three to obtain a satisfactory production.

Buttonwillow Gasser

Taft, Calif.—The Milham Exploration Company has completed Kern 3, Section 8-28-23, as a 10,000,000 foot gas well at 2695 feet. The well is located on the Buttonwillow structure, which has developed into one of the best gas areas in Kern County. The district has long been looked upon with favor and plans for a gas line from the field to cities of north central California have been considered for some time. Several large companies recently acquired additional acreage on and near the structure.

Sulphur Mountain Test

Los Angeles—The Bradford and Geis interests have tested their discovery well in the Sulphur Mountain field for several weeks, the average production having been about 200 barrels. Another well is being considered, but no location has been made. The well attracted wide attention last year, when it produced at a commercial rate from 1997 feet. By drilling to 2400 feet, a production of about 300 barrels was obtained. The well is producing from about 500 feet of oil sand. All oil has been stored, due to the lack of pipe line facilities.

Report Exaggerated

Eureka, Calif.—Early reports from Petrolia, stating that a good well had been completed on the Mattole River by the Northern Counties Oil Company, apparently were considerably exaggerated, since only very small producers have ever been completed in the region. Numerous oil seeps are found along the Mattole River and the earliest wells were drilled in 1865 feet. The formation is very broken and a production of less than one barrel is not unusual. There is no stable formation from which to produce and the wells decline to almost nothing in a very short time. The Northern Counties well, however, offers more promise than some of the shallower tests. Oil is standing in the hole but the exact amount has not been determined. The oil is a very light, volatile product and would find a ready market if enough could be produced.

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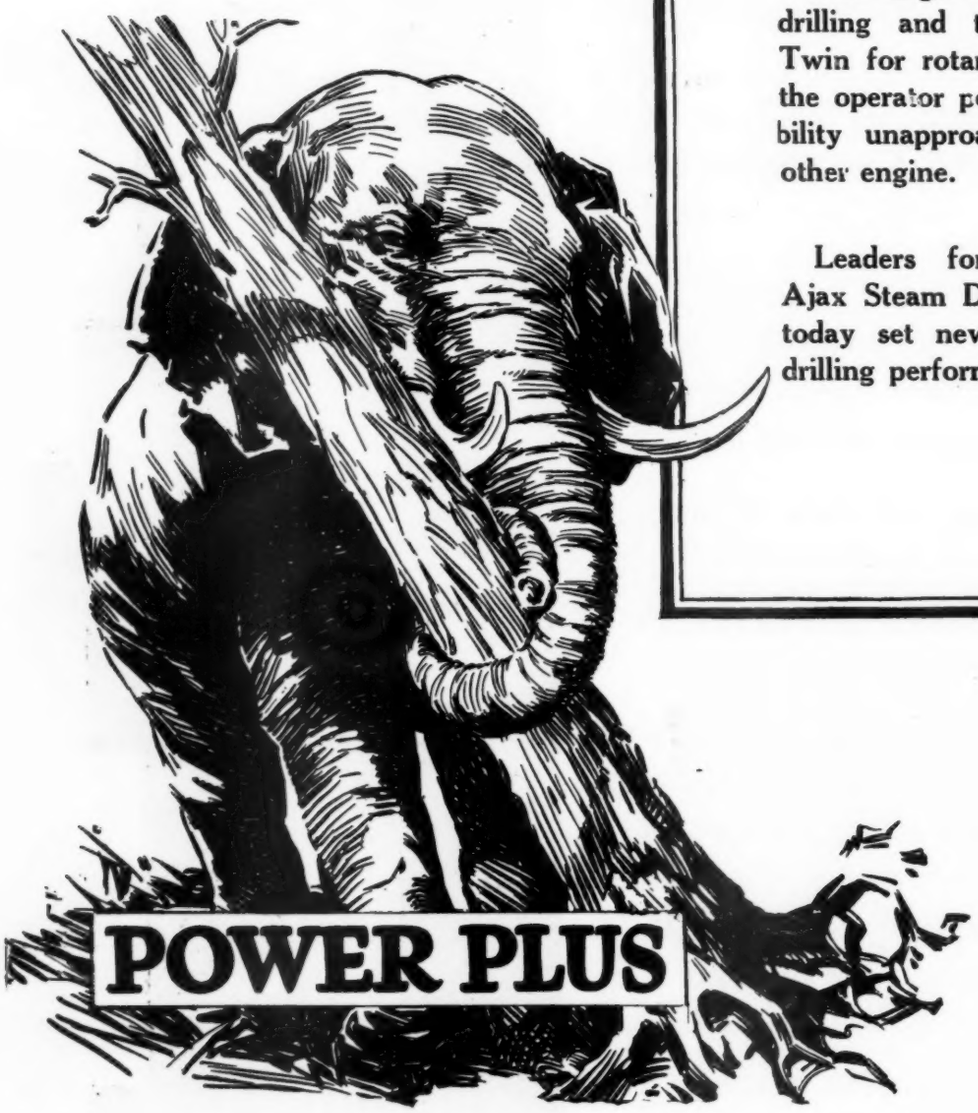

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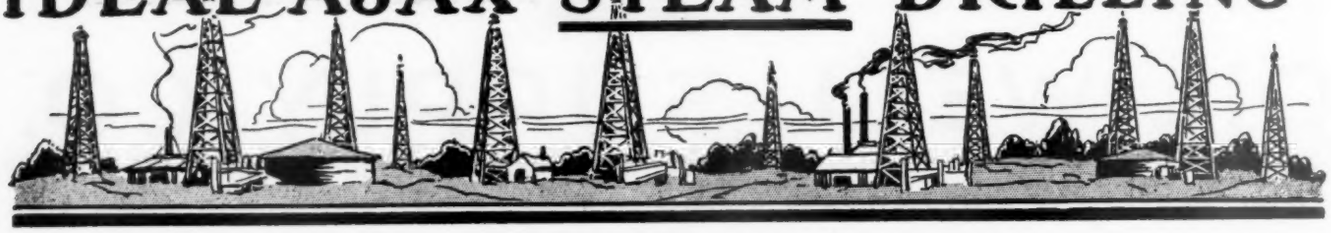

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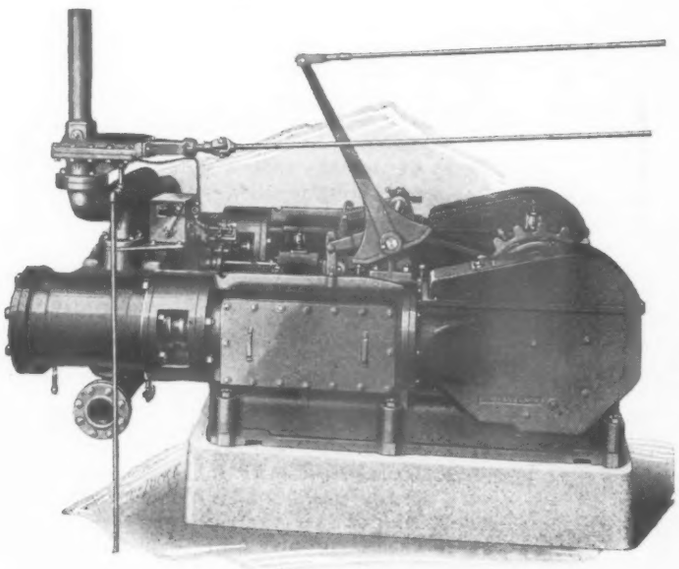

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Mountain States Field Development Notes

Texas Production Co. Enters Florence Field

Florence, Colo. — Texas Production Company has announced its intention of entering the Florence field, near this town, in Fremont County. The company has acquired acreage in the west extension of the pool, known as the Canon City district, on which are several producing wells. A drilling campaign will be started immediately, and it is reported that the company has plans to build a topping plant at Canon City. However, it seems more probable that the crude, which is 32 gravity, will be shipped instead to the company's Casper refinery, which at present is said to be badly in need of this grade. The oil is similar to Pennsylvania crude, and while it has not a high gasoline content, is especially rich in lubricants.

Previous to the entry of the Texas Production Company, the Continental Oil Company has been the only major operating company in this field, the second oldest in the United States. Recent discoveries and extensions to the field have enhanced its possibilities and future to a great extent. It is thought that this fact has had an influence in shaping the Texas Corporation's subsidiary to enter the district.

Increases Flow

Denver, Colo.—Midwest Refining Company's Shaw 4M, 27-4-92, Iles Dome, Moffat County, Northwestern Colorado, is producing 2400 barrels of pipe line oil from the Morrison sand. This well was completed in December and had an initial production of 1010 barrels crude. Recently the hole became partially shut off by cavings, and after cleaning it out, it was deepened four feet to a total of 2380 feet. It is one of the best wells in the pool.

Moffat Dome Well Makes 500 Barrels

Denver, Colo.—Most gratifying to operators on Moffat Dome, near Craig, in Northwestern Colorado, was the official announcement made this week by Texas Production Company to the effect that the company's Knowlton 10, at 4468 feet, was a flowing well with the production increasing to 500 barrels as the well was drilled into the Sundance sand. Location is in section 33-5-91. This is the only well to be drilled into the horizons below the Dakota on the structure, although several wells have proved productive in the Sundance on Iles Dome, the twin structure to Moffat.

This well produced 136 barrels initial in the top of the sand, and then its production decreased until it was no longer considered commercial. In the meantime, a well on Iles Dome was drilled 60 feet into the sand, and the lower horizon was found very much more highly saturated than the upper. The Texas Company then decided to deepen its Knowleton 10, with the result that it has a 500-barrel well producing 38.5 gravity crude. As a result the company will drill several more Sundance tests immediately; locations have not been definitely announced.

Bill to Permit Patent

Cody, Wyo.—Considerable turmoil in this new oil field community has been raised by the introduction into Congress of a bill which would permit the Oregon Basin Oil & Gas Company to acquire patent on some 1600 acres of land on the apex of the valuable Oregon Basin field. The bill in the Senate is No. 767 and would permit the company to go to patent on its lands, although the Interior Department has ruled that the company has not proved sufficient discovery.

The company has carried the matter, long since, to the Supreme Court, which decided that it was without jurisdiction inasmuch as the Secretary of the Interior was sole judge of the facts in the case.

The twin act of the one introduced into the Senate by Francis E. Warren of Wyoming has been introduced and passed in the House so that it is deemed possible that Congress will enact it into a law.

The Oregon Basin Oil & Gas Company is understood to be an old subsidiary affiliation of the Medwest Refining Company, and through the recent acquiring of properties of the Enalpac Oil Company in Oregon Basin, and other dealings, has now become controlled by the Ohio Oil Company.

Casper, Wyo.—Salt Creek Syndicate, one of the oldest lease owners in the Salt Creek field, has been sold outright for $50,000 cash to Continental Oil Company. A 160-acre leasehold in Salt Creek which was considered to be its principal holding.

Wyoming-Idaho

Evanston, Wyo.—Major operating ocmpanies are taking an active interest in the development of Southwestern Wyoming and Southeastern Idaho this year. Midwest Refining Company and California Company have already secured large blocks of acreage in the region and summer will see the development of several structures which will be drilled to test the Sundance formation. Most important among these structures are those known as Willow Creek, Scully Gap, Meridian Anticline, Cumberland Dome, Piedmont, the Narrows, Bulldog and Oregon Trail. Five rigs have been shipped and are being moved to location on Scully Gap and Cumberland Dome at present.

Wild Well Flowing 800 Barrels Per Hour

Great Falls, Mont.—Interest in Montana this week was divided between the operation of the Sunburst Oil & Refining Company at Flat Coulee structure, in the Sweet Grass hills, just across the Canadian boundary, and the freakish performance of the Baker-Barnhill-Corey well in the Kevin-Sunburst field.

The Flat Coulee well now has nearly 200 feet of cavings in the hole. These are blown out by oil and gas every time an attempt to clean out is made, and then freeze on the crown block. Until the weather moderates it will be impossible to test the well's initial production.

The Baker-Barnhill-Corey well, 9-34-1w, has repeatedly broken control and flooded the surrounding prairie with oil, causing truck tanks from all neighboring camps to scurry out and pump up the maverick crude, which according to the law of the field, belongs to any who gather it up. At last report the well was making 800 barrels per hour, with every possible attempt being made to pinch it in. A syndicate composed of the doctors of the Murray clinic in Butte has paid $10,000 for a 1 per cent royalty in the well.

Wildcat operations in the State were slowed up by the severe weather which has obtained for the last eight or ten days. Preparations for many tests all over the State are being made, and operations will start with a rush with the first touch of real spring weather.

Order for Pipe Line

Kemmerer, Wyo.—A large order for material to be delivered at Opal April 1 has been let by Midwest Refining Company for its pipe line from the LaBarge field to railhead at Opal. The order includes four 80-horsepower Morse Diesel engines, and four power pumps to be delivered by Rumsey Pump Company, Ltd., of Seneca Falls, New York, as well as 38 miles of four-inch pipe from the National Tube Company. All preliminary work on the line is being completed.

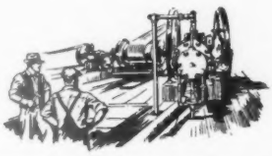
Oregon Basin Completion

Cody, Wyo.—Ohio Oil Company is completing another good well in the Oregon Basin field, Sonners 3, 8-51-100, at 3351 feet. This well is about 300 feet west of the discovery well which is now being cleaned out in an effort to restore the well to its original production. The company will complete its Baston 1, 6-50-100, in the southern end of the field, within a short time. This well has considerable oil and gas showing. The town of Cody is still in the stages of an incipient boom. The community is overrun with jobless individuals, and all conversation hinges on projected pipe lines and refineries.

FRANKLIN VALVELESS
OIL AND GAS ENGINES

ONE TRUCK TRANSPORTATION

EASILY INSTALLED

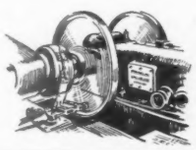


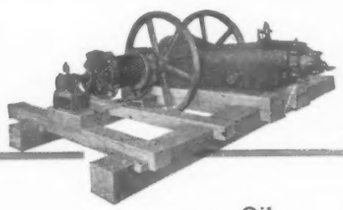
VISIBLE LUBRICATION

LOW FUEL COST

REQUIRES LESS WATER

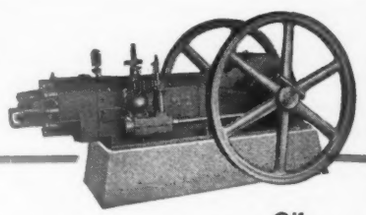
STARTS EASILY





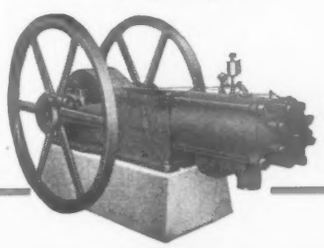
Oil
Drilling Engine

INTERCHANGEABLE
After Drilling Move in a
FRANKLIN Pumping Engine



Oil
Pumping Engine

Gas Pumping Engine



AN EFFICIENT **GAS ENGINE ALSO**

FRANKLIN VALVELESS ENGINE CO.
FRANKLIN, PENNA.

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OIL WELL SUPPLY CO.

Branch Stores in All Oil Fields

Mile Extension Revives Work at South Liberty

Four tests have been started off-setting Texas Company producer which opened new area; well holding to original flow

By JACK LOGAN
Staff Representative

HOUSTON. — Following the recent completion of The Texas Company's Green 1 as a one-mile extension of the South Liberty field, Liberty County, four new tests have been started in the immediate vicinity, and stakes have been driven for several tentative locations. Drilling of the latter, however, will be held up, awaiting the outcome of the four tests that have been started.

The four new operations include Harrison & Abercrombie's Lacour 1, which is 50 feet each way out of the northeast corner of the Lacour lease; Sun Oil Company's Abshier 1, 50 feet each way out of the northwest corner; The Texas Company's Green 3, offsetting Sun's Abshier 1, and being 127 feet due south of The Texas Company's new producer; and The Texas Company's Green 2, which offsets Harrison & Abercrombie's Lacour 1 and is 100 feet due west of The Texas Company's Green 3.

Production of The Texas Company's Green 1 continues about the same as when it was completed on February 26. Early this week the well had an output of around 1840 barrels of pipe line oil a day, still flowing through a five-eighths inch choke, the corrected gravity of the oil being 25.7 and the temperature 88 degrees. The depth of the hole is 2290 feet. In the older producing areas of this dome, the wells range from 3000 to 3900 feet in depth, and the gravity of the oil is from 20 to 23.

Directly after the Green 1 was completed, The Texas Company began running the production to its Staiti lease, where it has several steel tanks, using a three-inch line that had been used for fuel oil in drilling the new well. By the first of this week, however, the company had completed a four-inch surface line from the producer to its main six-inch line, which skirts Duncan Lake on the north. The length of the new four-inch line is 2800 feet. Oil was run through it for the first time last Sunday. At the site of the new producer, The Texas Company now has four 1000-barrel steel tanks.

North Edge of Dome

The new Texas Company well is generally accepted as an extension of the producing area of the South Liberty-Dayton dome. It is the first test drilled so far north, and is supposed to be along the north edge of the dome. As outlined by numeorus tests through a period of many years, the dome is approximately 7000 feet wide and 15,000 feet long, being shaped in the form of an ellipse or oval, with the points of the ellipse to the northeast and the southwest. Running directly from the north to the south, across the center of the dome, dividing the ellipse into two almost identical parts, is the Trinity River, a winding, twisting stream which forms numerous horse-shoes in this district, and during rainy seasons cuts through those horse-shoes to inundate large stretches of land.

This dome is in the south central portion of Liberty County, being about 38 miles northeast of Houston. The towns nearest the dome are Dayton, on the west side of Trinity river, and Liberty, on the east side of the river, both being on the Southern Pacific railroad. Thus the southwest half of the dome is most accessible from Dayton, and the field that has been developed on that side of the dome is most generally called South Dayton; while the northeast half of the dome may be reached best from Liberty, with the consequence that the field on that part of the dome is known as South Liberty.

DRILLING CREW OF THE GREEN 1, SHORTLY AFTER COMPLETION.
(Photo courtesy of Layne & Bowler.)

This dome is in the heart of the Texas Gulf Coast salt dome region, being 12 miles from Hull, 18 miles from Batson, 22 from Saratoga, and 25 miles from Sour Lake, all of those fields being to the northeast. Other fields nearby include Humble, 25 miles west; Barbers Hill, 12 miles southwest; North Dayton, 12 miles northwest. All of these domes are productive, and all but Barbers Hill and North Dayton have yielded large quantities of oil.

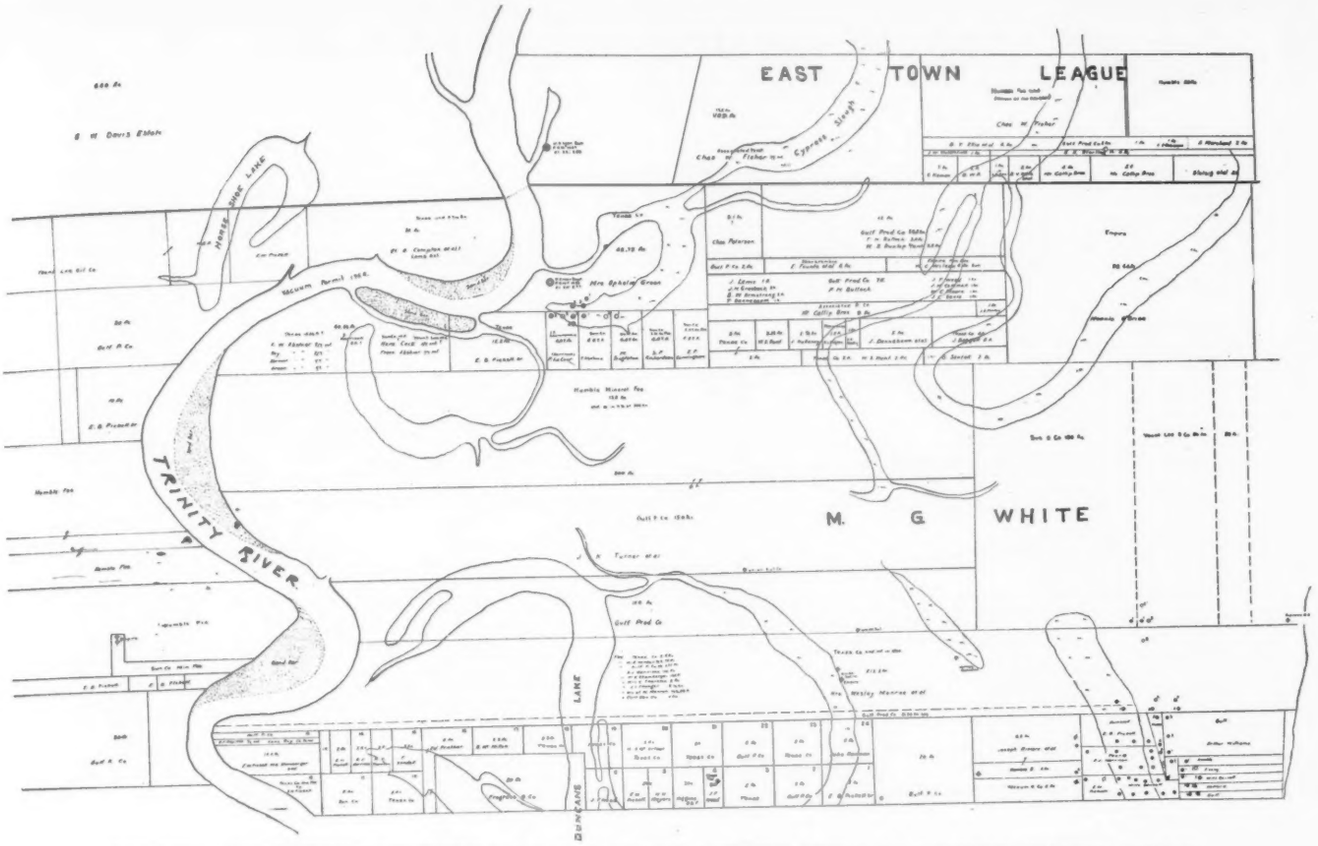
History of Development

The first prospecting for oil on the South Liberty-Dayton dome was started shortly after the finding of oil at Spindle Top in 1901. That a salt dome lay beneath the Trinity River bottom land was indicated by sulphur springs, gas escapes and oil seepages. Large gas bubbles came up in the sulphur water of a spring located near the south end of Duncan Lake, and there were similar inidcations across the river to the southwest. On the strength of these indications Bullard & Wilson drilled three shallow tests on the west side of the river in 1902, being the first operators on the dome. These tests were only about 400 feet deep, and although they had good showings, found no production.

By the end of 1906 seven tests had been completed on the east side of the river and 10 on the west. None of them, however, were over 900 feet deep, with the exception of one 1200 and one 1500 foot test on the east side of the river.

During the next 10 years a large number of shallow tests were drilled on and around the dome in search for caprock oil, which was present in a thin layer over the salt water. But none of the wells were successful, as the salt water inevitably broke through the thin layer of oil.

Between 1917 and 1920 the Empire Gas & Fuel Company, encouraged by the finding of deep oil around other Coastal domes, drilled 14 tests at South Liberty-Dayton, but did not develop any commercial production. These tests included a 2875 foot well on the J. Reviere land in the M. G. White league, on the east side of the



SHOWING NORTHWEST EXTENSION OF THE SOUTH LIBERTY FIELD IN LIBERTY COUNTY, TEXAS

river. It threw oil over the derrick but sanded up and was later abandoned as a failure. On the west side of the river this company drilled two tests on the Charles Wilson land to 3000 and 3600 feet. On the Jackson land three tests less than 1500 feet were drilled, including one which pumped oil for several weeks, but not at a commercial rate. On the Welder land three deep tests were completed as dry holes. During the next several years, interest in the dome lagged.

It was not until January 3, 1925, that the dome was opened for commercial production. On that date Winfree & Pickett completed the discovery well of the South Liberty field, the Pickett 1, on the Pickett five acres. It came in flowing 700 barrels a day from 3427 feet. The production was standard Gulf Coast crude, being about 22 Baume gravity. The field spread to the south and to the north from the discovery well. Wells came in for initial production of from 500 to 4000 barrels. The peak production of the field was reached in the summer of 1925, going to 28,000 barrels a day. Before completion of the new Texas Company well, the proven productive area was a strip 800 feet wide and 4500 feet long. The new producer increases the length of the field to about 8400 feet.

The producers nearest the new extension well include The Texas Company's Staiti 7, about a mile southeast; and several wells just recently completed a little north of the Staiti 7. These latter include Yount-Lee Oil Company's Mitchell 1, which is 500 feet north of the Staiti 7; Yount-Lee's Mitchell 2, which will be put to pumping, following failure to flow, and the Sun Oil Company's Mitchell 1, offsetting Yount-Lee's Mitchell 1, which was completed late last week, flowing 700 barrels a day through tubing. These wells are around 3500 feet deep. They were completed as north extensions of the field, and have helped to revive interest in the district.

The average gravity of oil produced in the older part of the South Liberty field is around 22, and the production is from 3000 to 3600 feet. In all, about 35 tests on the South Liberty side of the dome, including those drilled years ago, have been completed as failures; and approximately 135 have been completed as producers. At present there are 62 producing wells in the field, exclusive of the new Texas Company well, and the production exclusive of that of the new well, is about 2000 barrels a day.

South Dayton

On the South Dayton side of the dome, the discovery well was drilled by Humble Oil & Refining Company. It was the Welder 1, completed on February 1, 1926, for an initial flow of 800 barrels of 20 gravity oil, the production coming from 3842 feet. On this side of the dome an all-time total of about 20 dry holes is on record, and about 14 tests have been completed as producers. Because of excessive salt water and weak gas pressure, however, this part of the dome has not been very successful. At present there are eight producing wells at South Dayton, including five Humble Oil & Refining Company wells; and the average daily production of the eight wells is about 300 barrels. The pay sand in this district is encountered at 3600 to 3900 feet.

During the period of slightly more than there years since commercial production was found, the South Liberty-Dayton dome has produced nearly 8,000,000 barrels of oil, making it one of the more remunerative of the coastal salt domes.

Set Long String

Houston—Humble Oil & Refining Company recently achieved what is believed to be a record in setting long strings of casing. In its Simms-Smith 73, at Goose Creek, 5268 feet of nine and one-fourth-inch A. P. I. seamless casing was set, being floated down. As the casing weighed 36 pounds to the foot, the entire string represented a weight of approximately 200,000 pounds.

Bakersfield, Calif.—The Pacific Eastern Production Company's Union Avenue 2 is nearing the 4000 foot level and is soon expected to strike the gas and oil sand which made the first well famous last summer. Geologically, the well is checking very closely with No. 1, which is located only a few hundred feet away. The company has recovered the underreamer in No. 1 and is preparing to test a promising sand found below 5300 feet.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1926	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	445,950	99,600	256,500	90,100	43,800	178,000	100,450	101,700	618,750	1,934,850	59,979,900
February	450,300	102,050	246,600	91,550	45,300	169,400	98,950	101,050	604,950	1,910,150	53,483,900
March	457,900	103,000	260,500	91,950	48,800	165,700	97,800	102,100	604,400	1,932,150	59,897,250
April	464,850	102,600	265,600	90,900	51,550	170,750	101,750	107,300	600,650	1,955,950	58,678,000
May	463,350	106,150	280,050	93,700	59,100	175,700	106,100	111,650	602,400	1,998,200	61,944,950
June	459,100	107,900	305,100	91,350	60,350	166,950	106,050	113,300	607,550	2,017,650	60,529,350
July	456,700	110,450	336,300	116,550	57,100	161,650	104,650	107,750	614,400	2,065,550	64,032,300
August	465,300	111,750	383,800	162,800	56,800	157,350	108,600	110,600	608,900	2,165,900	67,143,450
September	466,050	113,400	403,750	175,200	56,850	153,250	110,200	104,700	598,150	2,181,550	65,446,500
October	503,350	114,650	444,700	169,900	58,200	149,500	109,450	98,500	614,200	2,262,450	70,136,500
November	550,700	115,800	477,000	176,900	56,450	143,700	111,150	92,900	643,650	2,368,250	71,047,550
December	564,250	118,800	480,800	181,900	54,800	138,600	110,050	85,650	660,400	2,395,250	74,252,700
1927											
January	598,500	117,200	466,400	173,900	52,900	131,550	107,850	84,450	653,450	2,386,200	73,972,150
February	693,350	116,250	479,800	154,600	52,800	128,200	107,150	85,300	642,700	2,460,150	68,884,300
March	710,350	116,100	475,000	154,750	51,450	124,500	104,400	87,600	640,850	2,465,000	76,414,900
April	723,700	115,400	477,300	155,100	50,500	113,350	108,000	89,350	644,550	2,477,250	74,317,750
May	742,200	114,600	488,700	151,300	47,450	112,700	114,000	89,300	633,550	2,493,800	77,307,700
June	768,600	112,200	480,800	151,650	49,150	112,450	111,850	86,050	638,550	2,511,300	75,338,900
July	846,750	107,750	475,800	142,950	56,200	109,900	111,800	86,950	620,700	2,558,800	79,322,300
August	832,900	105,100	483,450	139,350	56,950	104,750	114,600	80,750	621,450	2,539,300	78,717,850
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February 4	667,700	110,800	532,000	119,100	45,400	90,150	107,500	79,550	614,100	2,366,300	16,564,100
February 11	670,750	109,650	533,850	116,050	45,650	88,550	106,000	74,300	613,700	2,358,500	16,509,500
February 18	668,100	109,950	541,700	113,450	45,350	88,250	104,500	74,700	617,300	2,363,300	16,543,100
February 25	658,700	110,700	540,300	114,500	44,900	87,750	103,500	74,900	613,900	2,349,150	16,444,050
March 3	653,950	112,750	545,950	118,450	45,300	86,700	103,000	76,250	614,400	2,356,750	16,497,250
Increase	.....	2,050	5,650	3,950	400	.....	.....	1,350	500	7,600	53,200
Decrease	4,750	.....	.....	.....	.....	1,050	500	.....	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Mar. 3	Feb. 25
Carson County	7,050	7,095
Gray County	18,600	19,050
Hutchinson County	46,200	46,700
Wheeler County	950	900
Others	50	50
Totals	72,850	73,150

NORTH TEXAS

Archer County	19,250	19,500
Baylor County	100	100
Burkburnett	12,750	12,600
Clay County (Petrolia)	500	500
Electra	11,150	11,000
Iowa Park-KMA	1,900	1,900
Montague and Cooke Cos.	12,550	12,700
Wilbarger	10,000	10,250
Totals	68,200	68,550

WEST CENTRAL TEXAS

Brown County	12,250	12,500
Callahan County	4,000	3,800
Coleman County	1,550	1,450
Eastland-Desdemona	8,500	8,750
Jack County	1,550	1,500
Palo Pinto County	500	500
Shackelford County	6,500	6,350
Stephens County	7,700	7,650
Throckmorton County	1,050	1,000
Young County	8,700	8,950
Others	500	500
Totals	52,800	53,000

WEST TEXAS

Crane-Upton Counties	90,500	92,000
Crockett County	2,500	2,600
Howard County	4,200	4,150
Jones County	1,000	1,100
Mitchell-Scurry Cos.	3,300	3,300
Pecos County	45,900	46,400
Reagan County	19,700	20,000
Winkler County	136,300	126,000
Others	2,200	2,350
Totals	305,600	297,900

EAST CENTRAL TEXAS

Corsicana-Powell	11,600	11,800
Currie	500	500
Mexia	7,350	7,400
Nigger Creek	1,300	1,400
Richland	500	500
Wortham	1,850	1,900
Totals	23,100	23,500

SOUTHWEST TEXAS

Dale	400	400
Laredo District	6,500	6,450
Luling	13,700	13,950
Lytton Springs	1,600	1,600
Somerset	800	800
Others	400	400
Totals	23,400	23,600
Ttl. Tex. (outside Gulf Coast)	545,950	540,300

TEXAS GULF COAST

Barbers Hill	650	650
Batson	1,400	1,350
Big Creek	2,150	2,000
Blue Ridge	4,150	4,000
Boling	2,300	2,500
Damon Mound	900	850
Goose Creek	7,500	7,300
Hull	12,000	11,500
Humble	1,450	1,500
Orange County	4,400	4,650
Pierce Junction	8,250	8,950
Saratoga	1,050	1,050
Sour Lake	3,400	3,400
South Liberty	4,000	2,200
Spindle Top	34,400	36,700
West Columbia	8,000	8,000
Others	3,450	2,500
Totals	99,450	99,100
Texas Totals	645,400	639,400

OKLAHOMA

North Braman	2,850	3,000
South Braman	1,950	1,850
Blackwell	3,800	3,800
Hubbard	2,850	3,000
Thomas	1,600	1,450
Tonkawa	15,300	15,550
Garber	9,950	9,900
Burbank	44,450	44,900
Osage (outside Burbank)	29,500	29,500
Watchorn	950	950
Cushing	21,200	21,200
Yale Jennings	8,900	8,900
Davenport	2,350	2,400
Bristow Slick	24,900	24,900
North Okmulgee	15,750	15,800
Lyons Deaner	1,400	7,600
Stroud	1,100	1,100
Croomwell	10,100	10,500
Papoose	4,950	5,250
Wewoka	8,150	8,450
Seminole	56,950	56,600
Searight	18,150	18,200
Earlsboro	107,700	109,850
Graham	5,750	5,750
Healdton	14,200	14,350
Scholem Alechem	13,000	14,400
Bowlegs	88,500	88,800
Little River	34,100	33,500
Duncan District	6,600	6,600
Fox	1,700	1,700
Hewitt	8,800	8,800
Others	80,600	80,150
Totals	653,950	658,700

CALIFORNIA

Santa Fe Springs	38,000	38,000
Long Beach	119,000	116,500
Huntington Beach	58,500	58,500
Torrance	19,500	19,500
Dominguez	12,500	12,500
Rosecrans	7,000	7,500
Inglewood	30,000	30,500
Midway-Sunset	79,500	79,500
Ventura Avenue	53,500	54,500
Seal Beach	39,500	39,500
Others	157,400	157,400
Totals	614,400	613,900

ARKANSAS

El Dorado	5,100	5,150
Champagnolle	1,000	1,100
Smackover Light	8,500	8,500
Smackover Heavy	66,950	67,700
Stephens	1,050	1,050
Nevada	1,700	1,800
Lisbon	2,300	2,350
Others	100	100
Totals	86,700	87,750

KANSAS

	Mar. 3	Feb. 25
Greenwood County	30,700	30,150
Florence-Covert	1,400	1,450
Peabody-Ebling	3,750	3,750
Eldorado-Towanda	14,250	14,250
Augusta-Fox Bush	4,200	4,200
Rainbow Bend	1,850	1,850
Russell	3,000	2,950
Churchill	13,100	12,600
Oxford	15,300	14,100
Others	25,200	25,400
Totals	112,750	110,700

NORTH LOUISIANA

Homer	4,400	4,400
Haynesville	6,400	6,400
Caddo Light	11,650	11,250
Caddo Heavy	4,000	3,900
DeSoto-Red River	4,200	4,300
Elm Grove	650	550
Bellevue	1,000	1,000
Cotton Valley	4,500	4,500
Urania	7,850	7,950
Pleasant Hill	650	650
Totals North Louisiana	45,300	44,900

LOUISIANA GULF COAST

Edgerly	1,400	1,500
Evangeline	950	1,000
Lockport	5,200	4,700
Vinton	4,500	4,600
Sorrento Dome	2,500	....
East Hackberry	2,650	....
Sweet Lake	1,300	....
Others	500	3,600
Total Louisiana Gulf Coast	19,000	15,400
Louisiana Total	64,300	60,300

MOUNTAIN STATES

WYOMING

Salt Creek	39,700	37,300
Grass Creek	2,350	2,400
Elk Basin	1,000	1,050
Big Muddy	2,700	2,700
Lost Soldier	2,900	3,200
Rock River	2,650	2,750
Lance Creek	650	600
Others	4,000	3,600
Totals	55,950	53,600

MONTANA

Cat Creek	1,800	1,800
Sunburst	9,000	9,000
Others	150	150
Totals	10,950	10,950

COLORADO

Moffats (Craig)	1,150	1,200
Fort Collins	3,200	3,150
Florence	1,200	1,150
Others	1,700	2,300
Totals	7,250	7,800

NEW MEXICO

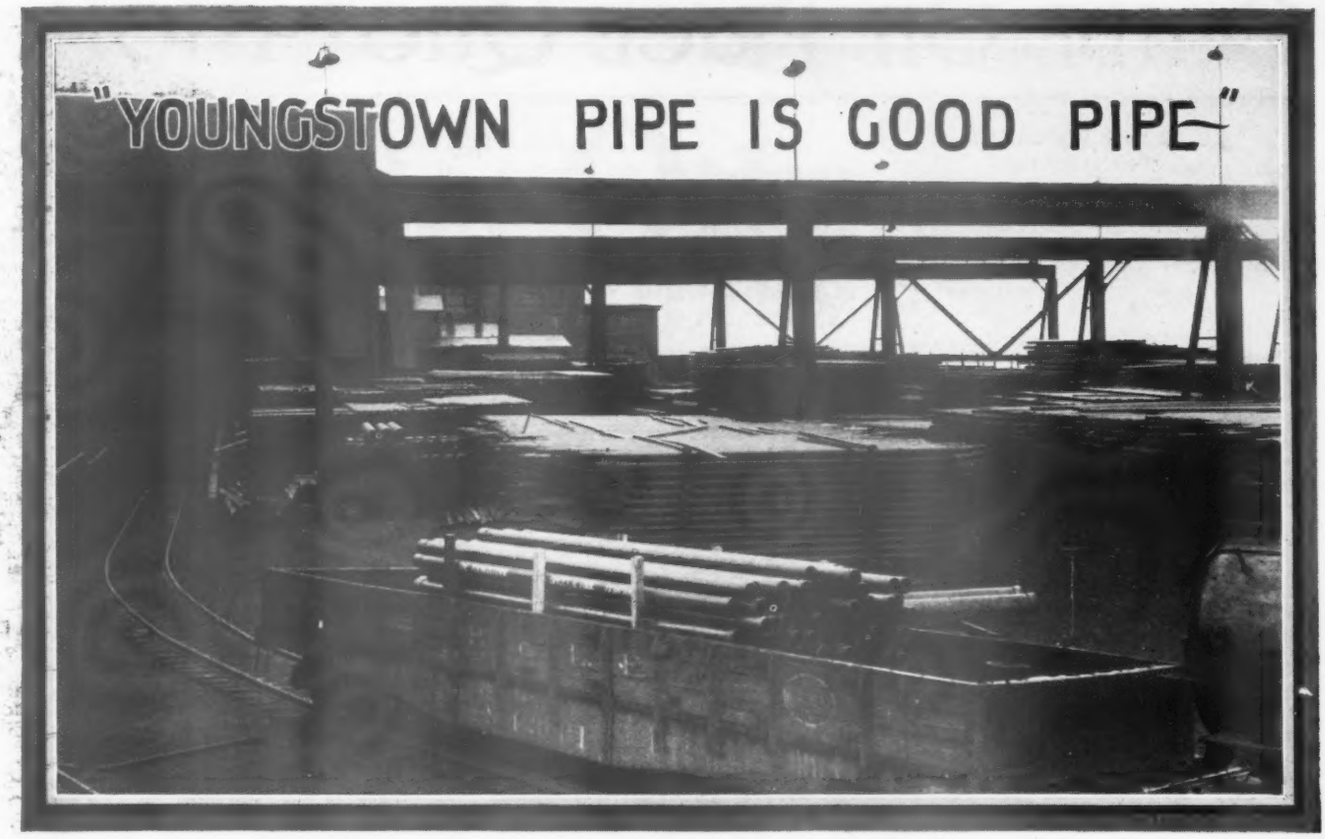
Table Mesa	....	250
Artesia	1,250	1,250
Hogback	500	500
Rattlesnake	100	300
Others	250	250
Totals	2,100	2,550
Totals Mountain States	76,250	74,900

EASTERN STATES

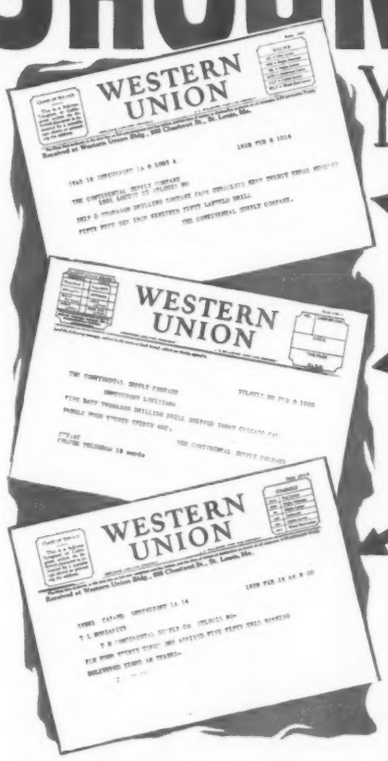
(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	103.000	103,500

PRODUCTION SUMMARY

East of Rockies	1,666,100	1,660,350
United States	2,356,750	2,349,150



5 HOURS after order was wired, this Youngstown shipment started



10:03 A. M.—Order wired from Shreveport to St. Louis, office.

3:15 P. M.—Shreveport was advised shipment leaving Indiana Harbor (Chicago) Mill.

5 DAYS LATER—Shipment received at Shreveport.

This is not unusual, but is a typical example of YOUNGSTOWN and CONTINENTAL Service

"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: St. Louis.

Export Office: 74 Trinity Court, New York

London Office: 316-317 Dashwood House, Old Broad St., E. C. 2

THE CONTINENTAL SUPPLY COMPANY, LTD.

69 Thomas Block, Calgary, Alberta, Canada

CONTINENTAL

Say you saw it in The OIL WEEKLY

CRUDE OIL PRICE QUOTATIONS

CURRENT POSTINGS

EASTERN STATES

	Mar. 7 1928
New York Transit	$2.80
Bradford District	2.80
National Transit	2.65
Southwest	2.65
Eureka	2.60
Buckeye	2.35
Macksburg	2.80
Gaines	2.60
Somerset	1.60
Cabell	1.50
Ragland	.95
Corning, 35-cent grade	1.45
Corning, 25-cent grade	1.55
Keister	1.10

CENTRAL STATES

Illinois	1.50
Indiana	1.32
Lima	1.56
Plymouth	1.23
Princeton	1.50
Waterloo	1.35
Wooster	1.57

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren,

All grades	1.50

MID-CONTINENT

Prairie, Sinclair and Gulf

28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61

	Mar. 7 1928
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

(Humble Oil and Refining Company)

Below 25 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 and above	1.52

NORTH AND CENTRAL TEXAS

(The Texas Company and Magnolia Petroleum Company)*

24 to 24.9 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49

	Mar. 7 1928
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
42 and above	1.76

* Magnolia Petroleum Company posts the schedule below on oil below 30 gravity and from 30 gravity up to 31.9. Beginning with 32 to 32.9, Magnolia's posting is the same as that of The Texas Company.

Below 30 gravity	.75
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.05

Corsicana heavy is $1.00 posted by Magnolia.

SOUTH TEXAS

Mirando	1.00

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated.)

Gravity (degrees)	Signal Hill	Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Harbra	Montebello	Coyotte Hill	Santa Fee Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler
14-14-9	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
16-16-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
17-17-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
18-18-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
19-19-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
20-20-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	..	.77	.77	.77	.76	.76
21-21-9	.86	.86	.86	.86	.86	..	.86	.86	.85	.85	.86	.85	..	.79	.79	.79	.77	.77
22-22-9	.87	.87	.87	.87	.87	..	.87	.87	.85	.85	.87	.85	..	.81	.81	.81	.78	.78
23-23-9	.88	.88	.88	.88	.88	..	.88	.88	..	.85	.88	.85	..	.83	.83	.83	.79	.79
24-24-9	.89	.89	.89	.89	.89	..	.89	.89	..	.85	.89	.85	..	.85	.85	.85	.80	.80
25-25-9	.90	.90	.90	.90	.90	.90	.90	.90	..	.86	.90	.86	..	.87	.87	.87	.81	.81
26-26-9	.92	.92	.92	.92	.92	.92	.92	.92	..	.87	.91	.87	..	.89	.89	.89	.83	.82
27-27-9	.94	.94	.94	.94	.94	.94	.94	.94	..	.88	.92	.88	..	.91	.91	.91	.85	.83
28-28-9	.96	.96	.96	.96	.96	.96	.96	.96	..	.89	.93	.89	..	.93	.93	.93	.87	..
29-29-9	.98	.98	.98	..	.98	.98	..	1.00	..	.91	.95	.93	..	.99	.99	.99	.91	..
30-30-9	1.00	1.00	1.00	..	1.00	1.00	..	..	..	..	..	.95	..	1.02	1.02	1.02	.93	..
31-31-9	1.03	1.03	1.03	..	..	1.03	..	..	..	..	..	.97	..	1.05	1.05	1.05	.95	..
32-32-9	1.06	1.06	1.06	..	..	1.06	..	..	..	..	..	.99	..	1.08	1.08	1.08	.97	..
33-33-9	..	..	..	..	..	1.09	..	..	..	..	..	1.01	..	..	..	1.11	.99	..
34-34-9	..	..	..	..	..	1.12	..	..	..	..	..	1.03	..	..	..	..	1.01	..
35-35-9	..	..	..	..	..	1.15	..	..	..	..	..	1.06	..	..	..	..	..	..
36-36-9	..	..	..	..	..	1.18	..	..	..	..	..	1.09	..	..	..	..	..	..
37-37-9	..	..	..	..	..	1.21	..	..	..	..	..	1.12	..	..	..	..	..	..
38-38-9	..	..	..	..	..	1.24	..	..	..	..	..	1.15	..	..	..	..	..	..
39-39-9	..	..	..	..	..	1.27	..	..	..	..	..	..	..	..	..	..	..	..
40-40-9	..	..	..	..	..	1.30	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	1.33	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	1.36	..											

Cut Oil— *and cut profits*

Why sell your profits with your cut oil? Why sell cut oil at all—when Petreco is available to change it into profitable good oil?

Emulsified crude isn't worth much; but all that's necessary to make it valuable is to take the water out—dehydrate it. That's what Petreco does—what Petreco is—the electric process for dehydrating crude oil emulsions.

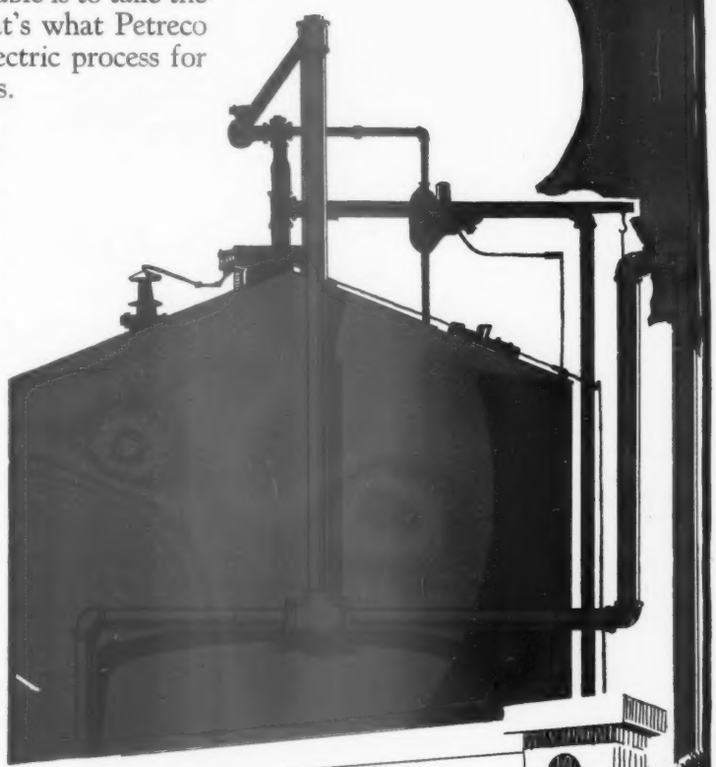
Petreco will stop cut profits from cut oil. Petreco will make all your production profitable. Let's get together.

We've prepared a book that tells all about Petreco. "The Electrical Process for the Dehydration of Crude Oil Emulsions," it's called. No obligation at all in asking for it—we'll send it by return mail—free.

PETROLEUM RECTIFYING COMPANY of CALIFORNIA

Security Title Insurance Bldg. 530 West 6th Street, Los Angeles, Calif.

Petroleum Bldg., Houston, Texas



PETRECO

Say you saw it in The OIL WEEKLY

	Mar. 7 1928
MARKHAM	
The Texas Company	
All grades	1.00
LULING	
All grades	1.00
PANHANDLE	
GRAY COUNTY	
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Refining Company)	
Below 27 gravity	.60
27 to 27.9 gravity	.65
28 to 28.9 gravity	.70
29 to 29.9 gravity	.75
30 to 30.9 gravity	.80
31 to 31.9 gravity	.85
32 to 32.9 gravity	.90
33 to 33.9 gravity	.93
34 to 34.9 gravity	.96
35 to 35.9 gravity	.99
36 to 36.9 gravity	1.02
37 to 37.9 gravity	1.05
38 to 38.9 gravity	1.08
39 to 39.9 gravity	1.11
40 to 40.9 gravity	1.14
41 to 41.9 gravity	1.17
42 to 42.9 gravity	1.20
43 to 43.9 gravity	1.23
44 and above	1.26
WHEELER COUNTY	
(Humble Oil and Refining Company and Magnolia Petroleum Company)	
Below 29 gravity	.60
29 to 29.9 gravity	.65
30 to 30.9 gravity	.70
31 to 31.9 gravity	.75
32 to 32.9 gravity	.80
33 to 33.9 gravity	.83
34 to 34.9 gravity	.86
35 to 35.9 gravity	.89
36 to 36.9 gravity	.92
37 to 37.9 gravity	.95
38 to 38.9 gravity	.98
39 to 39.9 gravity	1.01
40 to 40.9 gravity	1.04
41 to 41.9 gravity	1.07
42 to 42.9 gravity	1.10
43 to 43.9 gravity	1.13
44 and above	1.16
CARSON-HUTCHINSON COUNTIES	
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Refining Company)	
Below 31 gravity	.60
31 to 31.9 gravity	.65
32 to 32.9 gravity	.70
33 to 33.9 gravity	.73
34 to 34.9 gravity	.76
35 to 35.9 gravity	.79
36 to 36.9 gravity	.82
37 to 37.9 gravity	.85
38 to 38.9 gravity	.88
39 to 39.9 gravity	.91
40 to 40.9 gravity	.94
41 to 41.9 gravity	.97
42 to 42.9 gravity	1.00
43 to 43.9 gravity	1.03
44 and above	1.06
(Humble Oil & Refining Company)	
Crane, Upton, Crockett and Pecos counties, all grades	.60
WEST TEXAS	
(Humble, Gulf, Magnolia, Kay County Gas Company and Southern Crude Oil Purchasing Company)*	
Crane, Crockett, Pecos, Upton and Winkler, Counties	.60
*Kay County Gas Company does not buy in Winkler and Pecos Counties, and Southern does not buy in Pecos or Crockett.	
(Magnolia Petroleum Company)	
Mitchell County	$ .93
Howard-Glasscock County (shallow)	.80
Howard-Glasscock County (deep)	.60
Col-Tex Refining Company	
Howard and Mitchell Counties	$ .80
WYOMING-MONTANA	
Wyoming	
Byron	1.33
Ferris	1.60
Elk Basin	1.33
Grass Creek	1.33
Rock Creek	1.25
Lost Soldier	.95
Lance Creek	1.33
Mule Creek	1.10
Notches	.65
Big Muddy	1.25
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00
Salt Creek	
Midwest Refining Company	
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30
MONTANA	
Sunburst	1.50
Cat Creek	1.33
Lake Basin	2.20
NEW MEXICO	
Artesia	1.00
Hobbs	1.38
CANADA	
Oil Springs	2.02
Petrolia	1.95
LOUISIANA-ARKANSAS	
(All Companies)*	
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton	
Below 28 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76
*Shreveport-Eldorado's postings stop at above 40 gravity.	
STEPHENS	
(All Companies)	
Below 28	.85
28 to 28.9 gravity	.87
29 to 29.9 gravity	.89
30 to 30.9 gravity	.91
31 to 31.9 gravity	.93
32 and above	.95
SMACKOVER	
(All Companies)	
Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.75
Cotton Valley	.75
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Feb. 25	Feb. 18
AT ATLANTIC COAST PORTS		
Baltimore	.....	197,000
Boston	74,000	.....
New York	739,000	*1,039,000
Philadelphia	114,000	298,000
Others	164,000	141,000
Total	1,091,000	1,675,000
Daily average	155,857	239,286
AT GULF COAST PORTS		
Galveston District	.....	.....
New Orleans and Baton Rouge	146,000	179,000
Port Arthur and Sabine District	67,000	.....
Tampa	.....	.....
Total	213,000	238,000
Daily average	30,428	34,000
AT ALL UNITED STATES PORTS		
Total	1,304,000	1,913,000
Daily average	186,285	273,286
Daily average four weeks ended	236,286	248,857

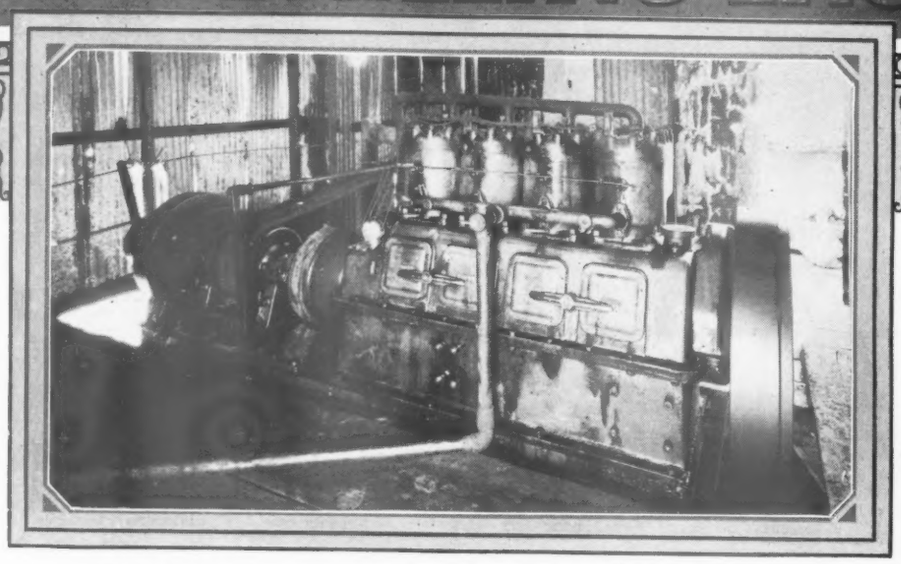
RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Feb. 25	Feb. 18
AT ATLANTIC COAST PORTS		
Baltimore	.....	*24,000
Boston	.....	.....
New York	150,000	317,000
Philadelphia	.....	123,000
Others	.....	79,000
Total	150,000	543,000
Daily average	21,429	77,571
AT GULF COAST PORTS		
Daily average	.....	.....
TOTAL ATLANTIC AND GULF COAST PORTS	150,000	543,000
Daily average	21,429	77,571
Daily average four weeks ended	51,500	59,893
DISTRIBUTION OF TOTAL CALIFORNIA RECEIPTS IS AS FOLLOWS:		
Crude	.....	169,000
Gasoline	150,000	223,000
Kerosene	.....	.....
Gas oil	.....	151,000
Lubricating	.....	.....
Total	150,000	543,000

*Revised.

CLARK DRILLING ENGINE



6 Good Reasons Why the CLARK is Supplanting Steam—

DOES EVERYTHING STEAM CAN DO. The CLARK Drilling Engine gives the needed slow drilling motion. Furnishes plenty of power for the largest and deepest wells. Handles heaviest strings of pipe. Controlled from derrick floor, in same manner as a steam engine.

SAVES MONEY ON FUEL. Uses, on average, only about 7000 feet of gas per day as compared with 60,000 feet for steam. Or uses 75 gallons of gasoline where steam requires 500 gallons of fuel oil.

SAVES WATER EXPENSE. Uses practically no water, eliminating trouble and cost of providing large amount of water. No expense for cleaning scale.

DRILLS FASTER because it maintains maximum power and speed indefinitely, with no waiting for steam pressure.

MORE PORTABLE. Is lighter than equivalent steam rig and is readily moved on its own truck.

REDUCES FIRE RISK by eliminating open fires which might ignite escaping gas or oil.

CLARK BROS. COMPANY
Olean, N. Y.

Branch and Warehouse: 125 W. First St., Tulsa
Warehouses at McCamey and Sweetwater, Texas, and Artesia, N. M.

SMITH BOOTH USHER COMPANY
228 S. Central Ave., Los Angeles. 50 Fremont St., San Francisco

CLARK

Say you saw it in The OIL WEEKLY

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	3	2	1	..	..	1	2	1	15	....
California	9	10	9	9	..	..	..	1	3,120	6,530
Colorado	4	..	3	..	1	..	..	..	600	....
Illinois	4	3	3	1	..	1	1	1	41	3
Indiana	..	2	..	1	..	..	..	1	....	75
Kansas	22	19	12	11	2	1	8	7	3,135	1,380
Kentucky	23	12	15	10	1	..	7	2	335	1,664
Louisiana	23	13	5	3	8	5	10	5	335	125
New Mexico	1	..	1	..	..	..	..	..	150	....
Ohio	11	23	7	6	3	13	1	4	139	137
Oklahoma	70	77	40	32	15	12	15	33	12,265	14,841
Pennsylvania	8	7	2	2	3	2	3	3	3	12
Tennessee	..	1	..	1	..	..	..	..	....	960
Texas	144	104	82	49	12	8	50	47	62,659	115,070
West Virginia	17	26	2	9	11	11	4	6	75	182
Totals	339	299	182	134	56	54	101	111	82,872	140,979
Increase this week	40	..	48	..	2	..	..	..	....	....
Decrease this week	..	..	..	..	..	..	10	..	58,107	....

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
E. M. Boring et al, Walker 1, sw se nw, 10-4s-2w	125	2184
Roxana Pet. Corp., Carter 1, se sw sw, 14-1s-3w	320	2450
Coline Oil Co., Higgins 6, se sw nw, 6-2s-2w	*	4139
CREEK COUNTY—		
Indep. O. & G. Co., Wolfe 9, swc nw ne, 18-14-10e	305	3433
Wilcox O. & G. Co., Kimble & Reading 1, sec nw, 18-14-10e	45	3426
H. C. Wilson, Secrest 1, swc se, 36-16-10e	20	2716
Roxana Pet. Corp., Sewell 4, ne nw ne, 18-19-9e	815	2871
Mayden et al, Futrell 1, nec se se, 1-19-9e	45	2078
Transcontinental Oil Co., Freeman 4, swc se sw, 14-17-8e	*	2792
Pure Oil Co., Crow 12, cnl se se, 26-18-12e	*	2198
GARFIELD COUNTY—		
Sinclair O. & G. Co., Hartley 19, swc nw, 18-22-3w	*	5958
GRADY COUNTY—		
Carter Oil Co., White Eagle-Polson 1, nw ne sw, 27-3n-5w	95	1719
Carter-Kerans 5, nw ne se, 21-3n-5w	85	1791
Wirt Franklin Oil Corp. et al, Woods 4, nw se ne, 17-3n-5w	100	2398
The Texas Co., Glover 2, ne sw nw, 13-4n-8w	¶17	2359
Commercial Dev. Co., Glover 1, sw ne sw, 13-4n-8w	¶41	2365
Carter Oil Co., Dryden 5, cwl e½ ne sw, 2-4n-8w	¶42	2350
Carter Oil Co., Wham 2, sw nw ne, 34-3n-5w	*	1947
KAY COUNTY—		
Royal O. & G. Co., Brazelton 1, c nw sw, 5-27-1e	¶1	858
Rogers et al, Ellidge 1, c se, 32-27-1w	¶3	761
Industrial O. & G. Co., Walker 1, c ne ne, 2-27-1w	¶1	761
Royal O. & G. Co., Fulton 1, c se ne, 12-28-1w	¶1	768
McINTOSH COUNTY—		
J. Aggas Porter 5, swc, 3-12-14e	¶1	1190
MUSKOGEE COUNTY—		
W. A. Peterson, H. James 1, sw se se, 18-14-17e	¶3	543
P. Boyle et al, Barnett 4, c ne se, 8-15-15e	180	1614
OKFUSKEE COUNTY—		
Sheldon Oil Co. et al, Jacobs 1, ne nw nw, 22-12-11e	25	3515
Barnsdall Oil Corp., Carolina 1, cnl s½ sw ne, 20-10-9e	¶44	3309
Laurel O. & G. Co. et al, Self 1, swc se ne, 21-13-9e	*	2905
OKMULGEE COUNTY—		
Johnson et al, Skelton 3, cel sw ne, 2-13-12e	¶1	1988
C. T. Smith, Rentie 10, nec se sw, 18-14-15e	6	1236
Indep. O. & G. Co., Tucker 1, swc se nw, 9-15-14e	¶4	1835
J. H. Rebold O. Co., Brook 1, swc ne, 6-15-13e	¶30	2095
OSAGE COUNTY—		
Delmar O. Co., 4, ne sw se, 17-23-10e	17	2516
Peters Pet. Co., 2, nec sw, 32-24-9e	15	1573
Carter Oil Co., 5, ne se se, 3-26-6e	1080	2902
Lewis Prod. Co., 4, swc, 2-16-6e	800	2901
3, nw sw sw, 2-26-6e	1200	2927
Kewanee O. & G. Co., 7, ne nw ne, 28-27-6e	1476	2995
3, se sw ne, 28-27-6e	190	2952
Kay County Gas Co., 1, se sw, 4-25-6e	*	3349
PAWNEE COUNTY—		
Sheridan O. Co., Ward 1, ne se nw, 20-20-10e	¶2	2210
J. H. Turner et al, 2, nec se, 30-20-9e	5	1109
Black et al, Cotton 4, cwl sw ne, 6-20-8e	¶2	2024
Turner et al, Hallett Townsite 1, sec sw ne, 8-20-7e	10	2696
Watchorn O. & G. Co., Arkeketa 1, ne sw se, 9-22-3e	*	4607
PONTOTOC COUNTY—		
La. Oil Ref. Co., Perry 7, swc nw, 20-5n-8e	200	2865
Westheimer et al, Milner 1, sec, 8-5-8e	200	2427
POTTAWATOMIE COUNTY—		
Continental Oil Co., Neghnguit 1, sec nw, 19-7-4e	475	3862
Indep. O. & G. Co. & Darby Pet. Co., Standridge 3, se nw sw, 14-7-4e	335	3793
C. J. Wrightsman, Thompson 1, se ne nw, 20-7-4e	*	4145
ROGERS COUNTY—		
Lon Riggs, Draper 1, cnl nw ne, 10-21-16e	*	857
SEMINOLE COUNTY—		
Magnolia Pet. Co., Davis 4, nw sw ne, 13-8-6e	*	4340
Sinclair O. & G. Co., Cosar 2, se nw nw, 36-8-6	980	4307
I. T. I. O. Co., Phoepe "B" 4, nw ne sw, 36-8-6	172	4882
Carter O. Co., Fish 7, nw sw nw, 36-8-6	630	4238
I. T. I. O. Co., 8B, ne nw ne, 15-8-6e	279	4200
Carter O. Co., Bowlegs 3A, sw se sw, 15-8-6	115	4373
The Texas Co., Reed 13, nec, 14-8-6	240	4443
Magnolia Pet. Co., Davis 5, swc ne, 13-8-6	105	4210
Twin State Oil Co., Barker 5, nw ne ne, 12-9-5	70	4306
Jarvis & Holm, Street 1, nw se nw, 21-7-8e	115	3150
STEPHENS COUNTY—		
Skelly Oil Co., Krebbs 4, nw sw se, 13-1s-4w	765	3200
Snodgrass et al, Nigh 1, nec nw, 34-1s-8w	250	1689
Geo. Pace et al, Allen 1, cnl nw ne, 3-2s-8w	*	2434
TULSA COUNTY—		
Superior Oil Corp., McKee 9, swc nw sw sw, 6-19-10e	150	2049
WAGONER COUNTY—		
Wm. McDougal, J. Dan 1, sec nw nw, 21-17-15e	75	1912
Wilson & Tillman, Butler 2, c se se, 33-16-17e	*	1834
R. F. Garland Co., Thomas 3, swc nw nw sw, 14-19-16e	*	449
Thomas 2, cnl nw se, 14-19-16e	*	523

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Pappas et al, Hulbert 1, nec se sw, 24-25-4e	*	772
COWLEY COUNTY—		
Skelly Oil Co., Saunders 1, nec nw ne, 31-31-6e	100	2304
Smith & Ash, Bush 1, nec nw se, 3-30-4e	*	2986
DICKINSON COUNTY—		
Harwood & Winters, Uteck 1, swc se nw, 35-16-4e	*	2601
ELK COUNTY—		
Denton et al, Denton 16, sec ne, 4-30-9e	75	2329
Union Gas Corp., Webb 23, c ne nw, 14-31-10e	¶1	1126
Denman Bros., Warren 2, swc, 36-31-10e	¶1	1994
GREENWOOD COUNTY—		
Empire G. & F. Co., Schwab 8, nwc se ne, 25-22-12e	75	1724
Darby Pet. Co., Schwab 6, swc nw, 30-22-13e	350	1759
Lassen et al, Wilkerson 3, sec sw, 6-25-9e	100	2216
Empire Gas & Ref. Co., Kolb 2, cnl nw ne, 15-25-13e	50	1447
Empire O. & R. Co., Schwab 5, scw ne se, 25-22-12e	*	2232
Powell et al, Smith 1, swc nw, 8-24-11e	*	2135
Higgins et al, Nicols 1, nec sw ne, 3-26-10e	*	....
MARION COUNTY—		
Braden, McClure et al, Smith 1, nec, 22-17-4e	50	2433
Ramsey et al, Bolby 1, swc ne ne ne, 22-17-4e	400	2429
Phillips Pet. Co., Peterson 1, nec nw sw nw, 23-17-4e	200	2406
Prairie O. & G. Co., Hartke 1, sw se nw, 1-18-4e	*	2330
RUSSELL COUNTY—		
Streeter & Stearns, Mermis 1, swc nw sw, 33-13-15w	1000	3317
SUMNER COUNTY—		
Roxana Pet. Corp., Emerich 4A, nwc sw se, 14-32-2e	35	1217
Palmer & Barnsdall Oil Corp., Wenrich 2, nwc ne ne nw, 23-32-2e	700	2013
DeFrost Drlg. Co., Riner 1, nwc, 36-30-2w	*	....

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
HUNTINGTON BEACH—		
Duncan Drilling Corp., 2	60	2230
KERN FRONT—		
George F. Getty, McDougal 7, 26-28-27	325	2150
MIDWAY—		
Honolulu Consolidated Oil Co., 2, 8-32-24	160	3115
Standard Oil Co., 99, 33-31-24	125	4330
MONTEBELLO—		
Standard Oil Co., Benedictine 2	200	3770
ROUND MOUNTAIN—		
Shell Co., Jewett 1, 29-28-29	350	1640
SEAL BEACH—		
Associated Oil Co., Hellman 3	1300	4905
Hellman 16	200	4850
SUNSET—		
Union Oil Co., Houchin 3, 10-11-23	400	5450

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
GREENE COUNTY—		
Carnegie Nat. Gas Co., Fordyce 2	¶2	3068
Wilson 1	*	3260
Peoples Nat. Gas Co., Fox 1	¶2	2180
J. L. Garard & Co., Dinzam 1	*	3000

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Acme Pipe Line Co., Albany
Marland Pipe Line Station, Albany
Texas Power Co., Blake Pool
Humble Pipe Line Station, Pioneer
Phillips Recovery, Sedwick
Phillips Petroleum Co., Trent
Marland Oil Co., Trent
Mid-West Exploration, Trent
Illinois Pipe Line Co., Yates Pool
T. & P. Coal & Oil Co., McCamey
Magnolia Pipe Line Co., Throckmorton
Humble Pipe Line Co., McCamey
San Angelo Refining Co.
Amerada Corp. Power, Burkett
Acme Tool Co., Cross Plains
Western Carbon Black Co., Pioneer.
Taylor Link Co., San Angelo
Mid-Kansas & Trans-Continental, Yates Pool
Gulf Production Co., Gates Pool
Dutch Shell Pipeline Co., McCamey
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Company, Well and Location	Initial Production Bbls.	Depth
Fay Headless Tr., Lemley 3	2	....
Charles Fox Gas Co., Lemley 3	1	3120
Philadelphia Nat. Gas Co., Simmerman 1	*	3200
ALLEGHENY COUNTY—		
Gibsonia Oil Co., Gibson 2	¶2	....
WEST VIRGINIA		
RITCHIE COUNTY—		
South Penn Oil Co., Wilson 1	30	....
Hope Nat. Gas Co., Lawrence 1	*	....
Osborne Oil Co., Osborne 1	¶¼	....
HARRISON COUNTY—		
West Va. Nat. Gas Co., Maxwell 1	*	4110
Reserve Gas Co., Eavens 1	¶¼	....
D. C. Logherty, Dennison 1	¶1½	....
CALHOUN COUNTY—		
G. L. Cabot, Halbert 1	¶¼	1938
W. H. Bickel, Sturm 1	¶1	1368
LINCOLN COUNTY—		
United Fuel Gas Co., Giiematers 1855	¶½	2308
Horse Creel Coal 3	¶1	....
ROANE COUNTY—		
South Penn Oil Co., Stockley 67	45	....
LEWIS COUNTY—		
Goodwin Bros., Lowther 1	¶¼	2084
BRAXTON COUNTY—		
Philadelphia Nat. Gas Co., Elk Valley Lumber 7546	¶1½	2261
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Ryan 2	¶1	....
PLEASANTS COUNTY—		
Dinsmoor & Co., Cook 38	*	....
WOOD COUNTY—		
Ira Connelly, Upton 1	*	....
GILMER COUNTY—		
James A. Tierney, Tierney 3	¶1¼	2045
ILLINOIS		
CRAWFORD COUNTY—		
Dinsmoor Oil Co., Dewey 12	4	....
John Phipps, Reaville 2	*	964
LAWRENCE COUNTY—		
Silurian Oil Co., Ross 6	35	1762
CLARK COUNTY—		
W. C. McBride, Inc., Deverick 2	2	570
KENTUCKY		
ESTILL COUNTY—		
Superior Oil Corp., Alexander 33	1	....
Alexander 34	*	....
Wood Oil Co., Isaac Henry 6	1	....
Brenner, Adams & Co., Kate Sawyer 11	3	....
Levy & Co., Beckley 2	*	....
JOHNSON-MAGOFFIN COUNTIES—		
Hupp, Duff & Co., Whitt 2, tr 6	6	....
Malcomb Whitt 2	5	....
Bailey 1	20	....
Henry Lemasters, Lemasters 3	10	....
ELLIOTT COUNTY—		
Isom Peters, Peters 1	2	....
FLOYD COUNTY—		
New Domain O. & G. Co., Horton 4	¶2	....
HANCOCK COUNTY—		
Chicago Pet. Synd., J. B. Taylor 1	25	724
DAVIESS COUNTY—		
S. J. Patrick & Co., Burns 1	*	1405
Bert Thompson, Pulliam 2	*	....
D. T. Bolling & Co., Miller-Aud 1	2	....
Leeper Oil Co., Roby 7	50	....
Orville Jenkins, Woodson 1	*	....
OHIO COUNTY—		
Creek Drilling Co., Bartlett Hrs. 8	150	765
The Ohio Oil Co., Foreman 1	30	325
Jordon, Short & Co., Jolly 2	25	....
George Randolph, Madden 4	5	511
Unknown Parties, Thompson Rabbitt Farm 1	*	720
Globe Oil Co. & Co., Steele 2	*	1183
NORTHWESTERN OHIO		
SANDUSKY COUNTY—		
Lindy Oil Co., Boyer 4	3	1349
SOUTHEASTERN OHIO		
MORGAN COUNTY—		
C. Hollowell & Co., Woodyard 2	¶¼	1527
Federal Valley O. & G. Co., Engle 1	¶¼	1678
NOBLE COUNTY—		
R. C. Hamlin & Co., Schafer 1	1	....
CENTRAL OHIO		
GUERNSEY COUNTY—		
Preston Oil Co., Curran 1	75	3392
LICKING COUNTY—		
Hope Construction & Refining Co., Prout 1	40	2784
HOCKING COUNTY—		
Gordon Oil Co., Noble 5	12	2870
COSHOCTON COUNTY—		
Hope Construction & Refining Co., Blair 2	5	3254
MUSKINGUM COUNTY—		
Hope Construction & Refining Co., Sidle 1	3	3150
PERRY COUNTY—		
Wilson Oil Co., Wilson 1	¶3	....
HOLMES COUNTY—		
The Ohio Oil Co., Jones 1	*	....
MOUNTAIN STATES		
COLORADO		
WELLINGTON—		
Union of Calif., Buckeye 6, ne 31-10-68	500	4418
FREMONT—		
Continental Oil Co., Lucas 1, se 3-19-70	50	1941
Robbins 1, ne 3-19-70	50	2230
WALDEN—		
Continental Oil Co., Pollock 1, 2-9n-79w	¶20	4785
NEW MEXICO		
ARTESIA—		
R. D. Compton, Mann 4, nw 4-18s-27e	150	2000
ARKANSAS		
UNION COUNTY—		
Lion O. & R. Co., Murphy D-7, 8-16-15	15	2658
LOUISIANA		
BOSSIER PARISH—		
Bahan & Davis, Holmes 1, 36-23-12	¶40	3078
The Texas Co., Peyton 1, 30-23-11	¶40	3067
CADDO PARISH—		
Standard Oil Co., Hart 18, 34-21-16	50	1836
Superior Oil Co., Youree 8, 26-20-15	5	2318
OUACHITA PARISH—		
J. M. Huber, Edwards 4, 1-18-4e	6	2211
Ouachita Nat. Gas Co., Smith 8, 37-20-4e	¶19	2100
Moody & Seagraves, U. S. Government 1, 1-19-3e	¶5	2177
Southern Carbon Co., Phillips 3, 8-19-4e	¶10	2170
RICHLAND PARISH—		
Ruston Drlg. Co., Sartor 1, 17-16-6e	¶55½	2440
WEBSTER PARISH—		
Magnolia, Munn 1, 29-23-9	¶9	2709
SOUTH LOUISIANA		
EDGERLY—		
J. D. Sutton et al, Lyons 1	*	3810
EVANGELINE—		
The Texas Co., Latrielle B-4	*	2150
Jennings Pet. Co., Crowley 4	45	1690
VINTON—		
Vinton Pet. Co., Gordon 1	125	3175
Gray 61	110	2390
TEXAS		
GULF COAST		
BATSON—		
East Batson Oil Co., Conzelman 10	35	1180
BLUE RIDGE—		
Gulf, Luscher 11	1000	3615
H. B. Gordon, Jr., Trustee, Blakely 2	50	3125
Navarro Oil Co., Robinson A-1	*	3680
H. R. Cullen, Lafferty 1	1500	3550
Davidson 1	2200	3510
Gordon & Sharp, Blakely C-2	100	1860
Fort Bend Oil Co., Blakely B-3	50	2190
Cunningham Prod. Co., Blakely 4	*	3095
GOOSE CREEK—		
Powell Oil Co., Bryan 6	*	2600
HIGH ISLAND—		
McLean Oil Co., Cade C-6	*	2500
HULL—		
Gulf, Phoenix Dev. Co. 89	40	3215
Republic Prod. Co., Dolbear 41	600	2675
NASH DOME—		
Ryeade Oil Corp., Wisdom 22	1500	4550
ORANGE—		
Sinclair O&G Co., Granger 4	740	3520
PIERCE JUNCTION—		
Moody Corp., Whitehead 2	*	3600
Houtex Oil Co., Traper 1	*	3200
Woodward & Lee, Settegast 1	1680	3350
SOUR LAKE—		
Farish & Ireland, S & B 2	200	1900
SPINDLE TOP—		
Sun Oil Co., McLean 16	500	5090
McLean 19	300	5170
Gulf, Jack & Duff	145	5100
EAST TEXAS		
HARRISON COUNTY—		
Magnolia, Vincent 1, R. W. Bedford sur	¶1½	1911
PANOLA COUNTY—		
Nat. G. & F. Corp., Adams 1, Evans Bracken sur	¶5	955
WEST TEXAS		
HOWARD COUNTY—		
Magnolia Pet. Co., Roberts 2	2700	2987
Owen-Sloan Oil Co., Roberts 3	50	1332
PECOS COUNTY—		
The California Co., Smith 11	9600	1400
Mid-Kansas-Transcontinental, Yates 16-A	1560	1189
Yates 19-B	8760	1332
I. G. Yates 1-F	560	1292
Phillips Pet. Co., Smith-Monroe 1	200	1372
WINKLER COUNTY—		
Atlantic Oil Prod. Co., Grisham-Hunter 3-A	960	3050
Grisham-Hunter 4-A	1680	3048
Gulf Prod. Co., Hendricks 10 ¶50 & 10440		2694
Landreth Prod. Corp. & Roxana, Hendrick 1-A	5000	3084
Pure Oil Co., Grisham-Hunter 2-B	1260	2970
Grisham-Hunter 3-B	750	2952
Southern Crude & Dixie Oil Co., Hendrick 2-A-3-T-68	¶75	2730
Texon Oil & Land Co., Grisham-Hunter 2-B	3700	3022
TEXAS PANHANDLE		
CARSON COUNTY—		
The Texas Co., C. R. Garner 2	¶37	2425
GRAY COUNTY—		
Phillips Pet. Co., Riley-Jackson 2	¶26	2775
HALE COUNTY—		
Tolbert & Simms, Kitteral 1	*	458
HUTCHINSON COUNTY—		
McMan & Marland Oil Co., A. Yake 1-A	*	3012
WHEELER COUNTY—		
Hatcher et al, Fee 2	¶43	1675
Mid-Kansas O&G Co., Newton 1	¶25	1920
CENTRAL WEST TEXAS		
BROWN COUNTY—		
Breeding et al, Hickman 1	300	1261
Central Texas Ref. Co., Allcorn 3	60	1145
Clark-Buffalo Oil Co., Brown Co. Fee 2	50	1097
Brown Co., Fee 3	100	1000
Cranfill-Reynolds Hill 1	50	1305
Davis et al, Perry 1	*	1165
Gilman & McMurray, Hickman 3	1000	1267
Hammon & Garrett, Matthews 1	5	1395
Lamb & Shaw, Perry 1	*	1110
Perry 2	*	1277
Gwathney 3	*	1507
Pandem Oil Corp., Curry 1-A	*	1115
Curry 5-B	¶¼	1200
Hutton 3	35	1132
Hutton 4	50	1180
Thomason 1	*	1063
Pelcham et al, Bush 1	100	1118
Phillips Pet. Co., Hickman 7	150	1268
Rex-Pyramid Oil Co., Fry 16	*	1480
M. L. Richards et al, Hutton 1	*	1200
Curry 3	60	1119
Sawyer et al, Watson 1	¶6	1607
Syndicate Oil Co., Curry 3	*	1130
Westbrook Oil Corp., Turner 2	*	1472
CALLAHAN COUNTY—		
House et al, Clinton 1	*	520
Parks & Gill, Wylie 1	*	400
Peer Oil Corp., Biggerstaff 1	*	2555
Shadbolt & Creighton, George 2	*	955
COLEMAN COUNTY—		
Empire Gas & Fuel Co., Casey 1	*	1710
Andy Urban et al, Goodgion 1	*	2160
EASTLAND COUNTY—		
John Hooser, Fox 9	25	1625
Fox 10	30	1620
Livingston & Wellman, Thompson 1	¶3	3782
Teatsorth et al, Water Works Fee 4	*	1430
PALO PINTO COUNTY—		
Cranfill-Reynolds, Inc., Gilbert 2	*	3863
T&P Coal & Oil Co., Stuart 156	40	1749
SHACKELFORD COUNTY—		
Roeser-Pendleton & Marland's Cook 40-A (Sec. 48)	15	1411
Tannehill Oil Co., Matthews 1 (Sec. 34)	370	1155
STEPHENS COUNTY—		
Clark & Hooker, McNabb 2	25	1955
T&P Coal & Oil Co., Binney 72	50	1780

(Continued on page 70)

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending March 3	Previous week	Total this month	Total this year	This week last year	This month 1927	Total same date 1927	Year total 1927
Arkansas	5	2	5	27	18	18	88	329
California	21	24	21	204	21	21	254	1,226
Louisiana	19	13	19	111	14	14	175	812
Kansas	14	47	14	211	29	29	300	972
Oklahoma	39	70	39	469	80	80	965	3,702
Texas	149	101	149	1,073	283	283	2,296	8,665
Mt. States	..	..	..	..	8	8	115	494
Totals	247	257	247	2,095	453	453	4,193	16,149

TEXAS

ARCHER COUNTY — Humble, Houston, Burns, Wilson 1, Geraldine sur, 150 ft from n and w lines. Texas Co., Wichita Falls, Wolf 1, W. H. Finch sur, 923 ft from e and 150 ft from s and w lines. F. H. Gohkle, Wichita Falls, Taylor 3, blk 233 Amer. Trib. sur, 150 ft from n and w lines. Bridwell Oil Co., Wichita Falls, Burns 2, blk 27, J. W. Harris sur, 300 ft s of 1. Crude Prod. Co., Wichita Falls, Prideaux 3, A. Rohus sur, 300 ft w of 1. United Prod. Co., Wichita Falls, Lemmond 1, T. Rose sur, 150 ft from n and w lines; Perkins 4, blk 22, D. C. S. L. sur, 150 ft from n and w lines. Harry Hines, Wichita Falls, Andrews 1, blk 136. R. Carson sur, 150 ft s of center of n line. Underwood Drilling Co., Wichita Falls, Ward 6, 1379, TE&L sur, 300 ft w of 3. Maer & Staniforth, Wichita Falls, Thuman 1, J. W. Harris sur, 150 ft from s and w lines. Simms Oil Co., Dallas, Turbeville A 21, blk 173, R. Carson sur, 300 ft w of 21.

BROWN COUNTY—Clark-Buffalo Oil Co., Brownwood, Brown County 2, No. 624, J. Kinney sur, 350 ft s of 1 Ledger O. & G. Co., Brownwood, Bush 1, S 624, J. Kinney sur, 150 ft from s and e lines. Kone Prod. Co., Cisco, Hickman 10, T. Benson sur, 150 ft from s and w lines. Cranfill & Reynolds, Cisco, Hill 1, No. 63, M. Mudgett sur, 1050 ft from w and 1631 ft from s line. Harry Gutzman, Fort Worth, Stanley 1, W. A. Smith sur, 150 ft from s and w lines. Syndicate Oil Corp., Abilene, Curray 3, E. L. Betts sur, 150 ft from n and e lines. G. R. Woods, Campbell, Neb., Baugh 1, J. C Neel sur, 200 ft from n and 150 ft from w line. M. E. Bishop, Brownwood, Fee 2, W. H. Irion sur, 470 ft from n and 150 ft from e line. Central Texas Ref. Co., Brownwood, Bull 1, R. Honeycutt sur, 150 ft from w and 200 ft from s line; Allcorn 4, R. Honeycutt sur, 400 ft w of 1. Porter, Blanchard & Davies, Brownwood, Curry 1, No. 624 J. Kinney sur, 190 ft from w and 150 ft from s line. Inland Oil Co., Brownwood, Linton 1, W. Viser sur, 250 ft from s and e lines. Cranfill & Reynolds, Cisco, Newton 3, S 623, R. Honeycutt sur.

CALLAHAN COUNTY—J. A. Jones, Moran, Warren 13, 2039, TE&L sur, 450 ft from w and 150 ft from s line. Boehn Drilling Co., Fort Worth, Smart 1, W. T. Lassiter sur, 430 ft from n and 830 ft from e line.

COLEMAN COUNTY — Moutray Oil Co., Abilene, Day 1, blk 121, HE&WT sur, 330 ft from n and 990 ft from e line. Roxana, South Bend, Gray 2, D. D. Young, No. 179, 1980 ft from w and 660 ft from s line. R. E. Pitts, Cross Plains, Burns 1, blk 17, A. White, No. 161, 150 ft from n and e lines. Archie Shaw, Burkett, Burns 37, A. Wickson sur.

COOKE COUNTY—McElreath & Suggett, Wichita Falls, Whaley 1, SA&MG sur, center. Maer & Staniforth, Wichita Falls, Field 1, J. C. Morgan sur, 150 ft from n and w lines.

COMANCHE COUNTY—Phillips Pet. Co., Bartlesville, Okla., Land 2, S 83, blk 46, H&TC sur, 438 ft from n and 497 ft from w line.

CALDWELL COUNTY—Texas Co., Houston, Clingsmith 8, Damon sur, 150 ft from s and e lines.

CARSON COUNTY—Empire G. & F. Co., Wichita Falls, Noel 1, S 41, blk 4, I&GN sur, w central.

CROCKETT COUNTY — R. R. Wohnlick, Fort Worth, Halff 1, S 69, I&GN sur, 150 ft from s and w lines.

DALLAS COUNTY—D. C. Matthews, Dallas, Seaton 1, J. G. Garrett sur, 500 ft from e and 300 ft from s line.

EASTLAND COUNTY—Texas Co., Wichita Falls, Horn 1, s 26, blk 2, H&TC sur, 990 ft from s and w lines. Cranfill & Reynolds, Cisco, Tate 1, S. Lacermon sur, 1115 ft from n and 150 ft from e line.

FORT BEND COUNTY — S. W. Watts, Houston, Blakely 3, blk B, E. Drew sur, 50 ft from s and w lines. Gulf Prod. Co., Houston, Trone 7, No. 67, H&TC sur, 1200 ft nw of 4; Wolf 8, No. 68, H&TC sur, 660 ft sw of 3. Cullen & West Prod. Co., Houston. Luscher 1, No. 3, J. Poitevent sur, 165 ft from n and 200 ft from w line; Lafferty 1, No. 3, J. Poitevent sur, 300 ft from w and 100 ft from s line; Davidson 1, No. 3, J. Poitevent sur, 100 ft from n and 200 ft from w line.

FREESTONE COUNTY—W. K. Henderson, Mexia, Richardson 1, M. Rionda sur, n central.

FALLS COUNTY—Groesbeck & Reynolds, Mexia, Marlin Natl. Bank 1, L. E. Moore sur, se corner.

GRAY COUNTY — Empire G. & F. Co., Wichita Falls, Holmes 1, S 179, blk 3, I&GN sur, center; Cobb 1, S 178, blk 3, I&GN sur, center. Spartan Oil Co., Fort Collins, Colo. Hopkins 1, S 85, blk B2, H&GN sur, 270 ft from n and 330 ft from e line. R. R. Osborne, Pampa, Sailor 1, S 111, I&GN sur, 330 ft from s and e lines. Delmar Oil Co., Bartlesville, Okla., Foster 1, S 55, blk B2, H&GN sur, 330 ft from w and 2310 ft from s line.

GUADALUPE COUNTY — J. J. Christie, San Antonio, Thomas 1, G. Cholwell sur, 1615 ft from w and 1130 ft from s line.

HARRIS COUNTY—Navarro Oil Co., Houston, Cain 4, S 98, J. Hamilton sur, 75 ft from w and 250 ft from s line. H. R. Cullen, Houston, Fee 5, S 98, J. Hamilton sur, 50 ft from s and e lines.

HARRISON COUNTY—Sam Sklan, Shreveport, La., Fuller 1, J. Short, center. Mississippi-Waskom Gas Co., Hattiesburg, Miss., Bush 2, R. W. Bedford sur, 650 ft ne of 1.

HARDIN COUNTY—Gilbert Co., Beaumont, Fee 101, S. Jackson sur, 90 ft e of 95.

HUTCHINSON COUNTY—W. L. Kistler, Tulsa, Okla., Smith 1, S 14, blk Y, M&C sur, 330 ft from s and w lines; 2, 330 ft from s and e lines; 3, 330 ft from n and e lines; 4, 330 ft from n and w lines. Phillips Pet. Co., Bartlesville, Okla., Land 2, S 83, blk 46, H&TC sur, 438 ft from n and 497 ft from w line.

HOWARD COUNTY—Sweeney & Henry, Chalk 6, S 124, blk 29, W&NW sur, 330 ft from n and e lines; Chalk 3, 310 ft from e and 350 ft from s line. Greene O. & R. Co., Fort Worth, Clay 1, blk 127, W&NW sur, 250 ft from s and e lines.

HASKELL COUNTY—S. S. Kouri, Wichita Falls, Reynolds 2, S 3, E. T. Ry sur, 500 ft. from n and w lines.

JEFFERSON COUNTY — Yount-Lee Oil Co., Beaumont, McFaddin 59, P. Humphreys sur, 642 ft from e and 1157 ft from n line. Gulf, Houston, Gladys 230, J. A. Veatch sur, 20 ft n of 185.

JACK COUNTY—Amerada Pet. Co., Cisco, Crawford 2, W. McDonald sur, 4500 ft se of 1. Connor, Croft & Rhen, Fort Worth, Roach 1, W. Berryman sur, 150 ft from s and w lines. Christie & Graham, Wichita Falls, Richards 2, BBB&C sur, 150 ft from n and w lines.

LA SALLE COUNTY—Southwestern Pet. Co., of Texas, Cotulla, Beckwith 1, Nos. 19-18, 150 ft from s and w lines.

LIMESTONE COUNTY — W. L. Forbes, Mexia, Tidwell 1, P. Varela sur, 10 corner.

MONTAGUE COUNTY — C. M. Beckner, St. Jo, Phillips 1, J. B. Crabtree sur, 150 ft from s and e lines. E. W. Walton, Jr., Nocona, Heaton 1, O. Buckman sur, 65 ft from w and 477 ft from s line. Arco Oil Co., Wichita Falls, Loy 4, Wm. Donoho sur, 150 ft from e and 450 ft from s line. Roy I. Carter, Wichita Falls, Bouldin 2, C. Chacon sur, 300 ft n of 1. Continental & Bridwell Oil Co., Wichita Falls, McGaughey 5, G. Nichols sur, 300 ft e of 4. Pure Oil Co., Mexia, Maddox A 7, H. S. Arnold sur, 150 ft from s and e lines. Keck A 3, Wm. Donoho sur, 200 ft from w and 1858 ft from s line. Gulf, Fort Worth, Cunningham 14, J. N. Hodges sur, 300 ft s of 13.

NUECES COUNTY—Saxet Co., Corpus Christi, Weil Bros. , 250 ft from n and e lines.

PECOS COUNTY—California Co., Colorado, Yates 16, S 34, blk 194, GC&SF sur, 509 ft s of 15. Gulf, Fort Worth Worth, Yates 8, R. C. S. L. sur, 4110 ft from w and 4160 ft from s line. M. W. Baden, Winfield, Kan., Corder 1, S 44, blk 2, CCSD&RGNG sur, center. Humble, Wichita Falls, Smith 7A, S 36, blk 194, GC&SF sur, 330 ft from w and 259 ft from s line.

PANOLA COUNTY — Magnolia, Dallas, Richardson 1, B. Lovell sur, J. R. Bahan, Shreveport, Cavin 1, B. C. Jordan sur, 5807 ft from n and 2663 ft from w line.

REAGAN COUNTY—California Co., Colorado, Adams (Mitchell County) Uiversity 4, S 3, blk 7, Univ. Lands sur, 285 ft from n and 437 ft from w line. Texas Co., Wichita Falls, Sugg 3, S 165, blk 2, T&P sur, center. Skelly Oil Co., Tulsa, Tunstill 1, S 35, blk 8, Univ. Lands, se corner.

RUNNELS COUNTY — Marland Oil Co., Fort Worth, Russell 1, J. F. G. Roach sur, 330 ft ne of center of sw line. Vacuum Oil Co., Houston, Fowler 1, D. Diaz No. 532 sur, 250 ft from e and 1563 ft from s line; Flannagan 1, D. Diaz No. 532, 750 ft from n and w lines.

SHACKELFORD COUNTY—Ell Evans, Abiene, Isbell 1, 589, TE&L sur, 1050 ft from w and 150 ft from s line. Flournoy & Hutton Oil Corp., Cisco, Poindexter 1, S 44, Blind sur, 150 ft e of center of w line. Meredith & Grant, Moran, Collinsworth 1, S 13, Univ. Lands sur, 750 ft from n and 150 ft from e line; Dabney 4, S 32, Univ. Lands sur, 750 ft from e and 150 ft from s line. E. L. Stratton, Fort Worth, Broyles 3, S 17, L. A. L. sur, 170 ft from n and 850 ft from e line. M. R. Brann, Cisco, Matthews 1, S 2, E. T. Ry sur, 150 ft from n and e lines. A. J. Hughes, Albany, Dillingham 2, 552, TE&L sur, 150 ft from n and e lines. R. C. Payne, Breckenridge, Muse 3, 808, TE&L sur, 150 ft from nw and 885 ft from ne line. J. F. Bailey, Fort Worth, Boyles 1, S 14, L. A. L. sur, 150 ft from s and e lines. Continental Oil Co., Wichita Falls, Jones 22, S 72, L. A. L. sur, 700 ft from n and 450 ft from ne line. Loggie & Arendt Oil Co., Albany, Blach 18, 507, TE&L sur, 150 ft from n and e ines. Roeser & Pendleton, Inc., Fort Worth, Cook B31, S 60, E. T. Ry, 67 ft from s and 383 ft from w line. De Witt & Phillips, Fort Worth, Davis 1, S 21, blk 13, T&P sur, 660 ft s of center of n line. John E. Lee, Albany, Humber 1, S 12, Blind sur, 150 ft from s and w lines.

SHELBY COUNTY — Magnolia, Dallas, Pickering 2, W. J. Crane sur, 150 ft e of center of w line.

STEPHENS COUNTY—Phillips Pet. Co., Bartlesville, Okla., Burke 1, S 39, blk 6, T&P sur, 400 ft from n and 548 ft from w line. Teci Prod. Co., Breckenridge, Stokes 3, 1216, TE&L sur, 530 ft from w and 1740 ft from s line.

SAN PATRICIO COUNTY — Saxet Co.,

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Corpus Christi, Bennett 1, blk 9, Rose sur, 658 ft from w and 813 ft from s line.

TOM GREEN COUNTY—Lone Eagle Oil Co., San Angelo, Sharp 1, S 167, W. Ezell sur, 1399 ft from e and 5280 ft from s line.

WICHITA COUNTY—E. J. Stump & Co., Wichita Falls, Chilson 1, blk 5, D. C. S. L. sur, No. 4, 750 ft from w and 150 ft from n line. A. F. Kimmell, Wichita Falls, Etheridge 2, S 13, H&GN sur, 460 ft from w and 450 ft from s line. Grayce Oil Co., Wichita Falls, Overby 7, N. P. Belch sur, 300 ft e of 6; 6, 300 ft s of 4. Ascot Co., Wichita Falls, Roller C 1, blk 112, F. Peterswick sur, 393 ft from n and 569 ft from e line. B. F. Miller et al, Electra, Waggoner 1, S 28, blk 5, H&TC sur, 1170 ft from e and 510 ft from s line. Putnam Oil Co., Tulsa, Okla., Parker 15, J. McCool sur, 200 ft se of 1. Coppock & Coleman, Iowa Park, Kemp & Kempner 5, blk 82, HT&B sur, 150 ft from s and e lines. Henry Hobbs, Wichita Falls, Hodge 2, blk 39, W. V. F. L. sur, 487 ft s of center of n line. Roy I. Carter, Wichita Falls, Pace 1, R. J. Scott sur, 150 ft from s and w lines. Texas Co., Wichita Falls, Waggoner 350, S 1, T. C. Ry sur, 1320 ft from n and 1650 ft from w line.; 349, 660 ft w of 322; 347, 660 ft n of 337. Gulf, Fort Worth, Jennings 19, S 8, HT&B sur, 150 ft from n and e lines.

WINKLER COUNTY — M. Inglewright, Fort Worth, Sealy 1, S 93, blk A, G&M sur, 330 ft from s and w lines. Atlantic Oil Prod. Co., Dallas, Hendricks D D5, S 29, blk B5, 1650 ft from w and 2310 ft from n line. Dixie & Southern Crude Oil Purchasing Co., Shreveport, La., Hendrick 1, S 41, blk 26, School sur, 330 ft from n and e lines. Gulf, Fort Worth, Hendrick 14, S 40, blk B5, 990 ft from n and 330 ft from w line. Humble, Wichita Falls, Hendricks B B5, S 29, blk 5, 660 ft w of 3; B6, 660 ft e of 1.

WHARTON COUNTY—Weed-Gayle Oil Co., Beaumont, Bay 13, S. F. Austin sur, 160 ft sw of 11. Gulf, Houston, Chase 11, S. F. Austin, sw corner.

WHEELER COUNTY — Ralph E. Davis, Pittsburgh, Penna., Woodley 1, S 21, blk 24, H&GN sur, center.

WILBARGER COUNTY—Fain-McGaha Oil Corp., Wichita Falls, Waggoner L 3, S 31, blk 4, H&TC sur, s of 2. Waggoner Ref. Co., Inc., Electra, Waggoner F 3, S 25, blk 4, H&TC sur, 460 ft w of 1; F 4, 460 ft n of 2.

YOUNG COUNTY—J. J. Moran, Wichita Falls, Vick 1, P. R. Splane sur, 150 ft from n and 872 ft from w line. Amerada Pet. Corp., Cisco, Johnston 4, TE&L sur, 2500 ft from w and 2000 ft from s line. Beard, Millican & Ford, Loving, Johnson 1, E. W. Sargent sur, 150 ft from s and w lines. Robert Oil Corp., Breckenridge, Thomas 1, 155, TE&L sur, 450 ft from s and 506 ft from e line. Texas Unity Oil Co., Dallas, Gragg 1, A. Rohus sur, 1846 ft from n and 150 ft from w line. Wooten & Reed, Graham, McKinley 1, 1489 TE&L sur, 150 ft from s and e lines. Fisher & Gilliland, Wichita Falls, Carter 1, 1594, TE&L sur, 150 ft from s and e lines.

ZAVALLA COUNTY—Witherspoon Oil Co., San Antonio, West 1, S 43, J. Fuentes sur, 400 ft from n and 4000 ft from w line.

OKLAHOMA

CARTER COUNTY — Wirt Franklin Pet. Corp., Morris 1, nwc se, 11-2s-3w.

CREEK COUNTY—W. G. Banks, Crider 2, csl se nw, 31-17-12e. Thompson & Black, Broadnox 3, nwc se nw, 16-17-11e. Tidal Oil Co., Roberts 1, nwc se, 20-17-7e. J. A. Hull, Walker 3, sec sw sw, 21-18-9e. Roxana Pet. Corp., Clark 3, sec nw nw, 18-19-9e. J. B. Grieves, Porter 7, cwl nw se, 12-19-8e.

GARVIN COUNTY—Magnolia Pet. Co., Cowan 28, se sw ne, 15-1n-3w.

HUGHES COUNTY—Dixie Oil Co. & Phillips Pet. Co., Perryman 2, sec sw, 17-8-10e.

JEFFERSON COUNTY—Amerada Pet. Corp., Emerson 1, nw se sw, 28-5s-8w.

KAY COUNTY—P. S. Wheeler, Wheeler 1, se sw sw, 14-27-1w. Black Gold Oil Co., Moore 3, ne nw nw, 10-27-1w.

MUSKOGEE COUNTY—P. Boyle et al, Simmons 2, cwl se ne, 10-15-15e. J. O. Tilly, Ackley 1, nec sw nw sw, 34-15-19e.

OKMULGEE COUNTY—Anadarko Western Oil Co., Ross 1A, nec se, 12-15-11e.

OSAGE COUNTY—C. B. Peters 3, cnl s½ nw, 26-25-9e. Phillips Pet. Co. 9, nec sw se, 17-27-6e; 8, nwc se nw se, 17-27-6e.

POTTAWATOMIE COUNTY—Indep. O. & G. Co., Saunders 1, nw ne ne, 19-7n-4e. Indep. O. & G. & Darby Pet. Co., Wallace 2, ne sw sw, 14-7-4e. Indep. O. & G. Co., Darby Pet. Co. & Gypsy O. Co., Hamby 3, se nw nw, 14-7-4e.

SEMINOLE COUNTY—Reiter-Foster Corp., Bunyard 1, se nw sw, 14-7-6e. Ramsey Culley, 2, ne ne sw ne, 18-5n-8e. La. Oil Ref. Co., Reed 4, se nw ne, 18-5-8e. The Texas Co., Hyde 1, sw nw sw, 8-5-8e. I. T. I. O. Co., Lizzie 3, nw sw nw, 11-8-6e. Magnolia Pet. Corp., Hammond 6, ne se ne, 10-8-6. Gypsy Oil Co., Sango 6, sw nw se, 1-9-5. Furhman Pet. Co., Davis 1, swc se, 3-10-6e.

STEPHENS COUNTY—Beard & Cobb, Wade 3, nwc sw ne, 11-2s-8w. Schermerhorn et al, Russell 1, ne nw se, 11-1s-4w. Pearce & Brown, Wilkinson 8, swc se, 27-1s-8w. Amerada Pet. Corp., Hanson 1, ne se sw, 12-1n-4w.

TULSA COUNTY—Superior Oil Corp., McKee 10, nwc sw sw sw, 6-19-10e.

WAGONER COUNTY—C. R. Crane et al, E. Williams 2, c se nw se, 35-17-17e. O. A. Sewell et al, McIntosh 2, cel se ne, 18-17-16e.

KANSAS

BUTLER COUNTY—Empire O. & R. Co., Marshall 1, nwc sw nw, 22-27-6e.

ELK COUNTY—Roth & Faurot, Hanna 12, nwc ne nw sw, 13-29-8e. Jacon Oil Co., Mullendore 2, swc nw sw, 3-30-9e. Phoenix Oil Co., Mills 4, nec nw nw nw, 23-30-10e. Sherman et al, Baker 1, swc nw nw nw, 10-31-10e.

GREENWOOD COUNTY—Simmons & Rhodes, Schwab 2, nwc se se, 30-22-13e. Skelly Oil Co., Schwab 2, sec sw ne, 30-22-13e; Len 1, nwc se ne, 32-22-13e. Superior Oil Corp., Len 1, sec nw ne, 33-22-13e.

MARION COUNTY—Braden, McClure et al, Folks 1, nwc, 23-17-4e. Lariaux et al, Merilatt 2, nwc se nw, 23-17-14e; Merrilatt 3, swc se nw, 23-17-4e. Deiter & Hoffman, Fronta 1, nec, 21-18-4e.

WOODSON COUNTY—Spencer & Rainey, Kimball 1, sec ne, 32-24-14e.

ARKANSAS

CLARK COUNTY — Wm. Henry Tr.'s Clark 1, 34-9-21, 1320 ft s and 1320 ft w of ne c.

COLUMBIA COUNTY — Geo. Dawley's Gantt 1, 12-17-22, 1080 ft s and 1000 ft w of ne c se.

NEVADA COUNTY — Autrey Oil Co.'s Haynie F-1, 6-14-20, 150 ft s and 150 ft e of nw c se sw.

DALLAS COUNTY—Dedman et al's Hillman 1, 20-10-13, nw c se ne.

UNION COUNTY—W. R. Keever's Kavanaugh B-2, 12-17-15, se sw ne.

LOUISIANA

BOSSIER PARISH—Magnolia, Shreveport, Matlock 1, 25-23n-12w, 660 ft n and 660 ft w of se sw. Rogers-Jensen, et al, Ft. Worth, Ledbetter 1, 7-18n-11w, 687 ft s and 782 ft e of nw c ne. Southern O. & G. Co., Inc., Philadelphia, Curtis 2, 36-17n-13w, 2600 ft n and 1024 ft e of sw c.

CAMERON PARISH — Calcasieu Oil Co., Inc., Magnolia Petroleum Co. & Union Sulphur Co., Houston, Caldwell 3, 36-12s-10w, 1212 ft s and 3267 ft e of nw c sec 24 in sec 36. Roxana Pet. Corp., Houston, Watkins Est. 1, 8-12s-12w, 1060 ft n and 40 ft e of sw c.

CATAHOULA PARISH — The Texas Co., Shreveport, Tensas Delta Land Co. B-1, 4-10n-6e, 2640 ft s and 2640 ft w of ne c.

MOREHOUSE PARISH—Gulf Ref. Co. of La., Shreveport, Willie Higginbotham 1, 42-20n-7e, 1072 ft s and 3282 ft e of nw c. United Carbon Co., Monroe, Jake Davis 1, 21-20n-4e, 485 ft s and 327 ft w of ne c se.

RICHLAND PARISH—Dixie Oil Co., Inc., Shreveport, McCoy 1, 29-16-6e, 660 ft n and 660 ft e of center. Nat. G. & F. Corp., El Dorado, Ark.. Thomason C-2, 21-16n-6e, 393 ft e and 533 ft s of nw c se ne.

RICHLAND PARISH—Nat. G. & F. Corp., Eldorado, Ark., Thomason C-3, 21-16n-6e, 391 ft e and 570 ft n of sw c ne ne; Thomason C-4, 21-16n-6e, 616 ft e and 553 ft s of nw c se ne.

UNION PARISH—Industrial Gas Co., Bastrop, Lewis 1, 14-20n-3e, 1980 ft s and 1960 ft w of ne c. R. W. Rhodes, El Dorado, Ark., J. M. Upshaw 1, 14-23n-2w, 200 ft s and 300 ft e of nw c nw sw. United Carbon Co., Monroe, Peek 1, 7-20n-4e, 660 ft n and 660 ft e of center. United Carbon Co., Monroe, Trimble 1, 19-20n-4e, 1980 ft n and 1980 ft w of se c.

WEBSTER PARISH—C. H. Lyons, et al, Shreveport, Munn Hrs 1, 1-22n-10, 1980 ft w and 1300 ft s of ne c ne. C. H. Lyons, et al, Shreveport, Porter-Wadley Lbr. Co. 2, 29-23n-9w, 660 ft s and 1980 ft e of nw c sw. Sun Oil Company, El Dorado, Ark., Haynes 1, 30-23n-9w, 660 ft s and 674 ft w of ne c.

CALIFORNIA

COALINGA—Zier Oil Co., No. 1, 1-20-14.

KERN FRONT—Calif. Pet. Corp., Cole 2, 26-28-27. General Pet. Corp., Sill 6, 26-28-27. Calif. Star Oil Co., No. 3-40, 22-28-27. Brownmoor Oil Co., Cauley 12-A, 16-28-27.

LONG BEACH—Greek-American Pet. Corp., No. 2, 29-4-12. Shell Co., J. C. 8, 29-4-12; J. C. 1, 29-4-12. McKeon Drilling Co., Knight 1, 19-4-12; C 1, 28-4-12. Shell Co., Wells 3, 29-4-12. Bush-Vorhis Oil Co., No. 23, 20-4-12. Signal Gasoline Synd., No. 8, 30-4-12.

MIDWAY—Honolulu Consolidated Oil Co., No. 79, 6-32-24. Standard Oil Co., No. 92, 33-31-24. North American Consolidated Oil Co., No. 29, 32-31-24.

RICHFIELD—Union Oil Co., Morse 8, 29-3-9.

VENTURA—Associated Oil Co., V. L. W. 1, 23-3-23. Shell Co., Gosnell 26, 28-3-23.

VENTURA COUNTY — Standard Oil Co., No. 1, 22-2-22.

WHEELER RIDGE—Standard Oil Co., No. 33, 27-11-20.

COMPLETIONS

(Continued from page 67)

NORTH TEXAS

ARCHER COUNTY—		
Burns & Humble O&R Co., Wilson 1	85	1564
F. H. Gholke et al, Wilson 3	65	1566
P. F. Gwynn & Humble, Birdwell 1	*	1400
Grisham & Panhandle Ref. Co., Farmer 1-B	*	1535
Harry Hines & Panhandle, Peeler 1	*	1553
The Texas Co., Cowan 1-G	*	1889
BURKBURNETT—		
T. M. Conroy et al, H. Willis 1	3	260
H. Willis 2	8	263
H. Willis 3	5	248
H. Willis 4	5	251
H. Willis 5	5	268
H. Willis 6	*	277
H. Willis 7	5	266
H. Willis 8	2	241
H. Willis 9	2	234
H. Willis 10	3	239
H. Willis 11	2	239
H. Willis 12	*	275
Grayce Oil Co., S. M. Daniel 12	*	270
H. Willis & Crabtree, Willis 1	3	242
Willis 2	*	242
Willis 3	5	233
Willis 4	3	235
Willis 5	2	241
Willis 6	1	105
COOKE COUNTY—		
W. J. Green et al, Campbell 2	10	747
GRAYSON COUNTY—		
Miller Drilling Co., Getzander 1	*	1015
JACK COUNTY—		
Buttram Pet. Corp., Jones 8	55	2058
K-M-A & IOWA PARK—		
C. E. Birk et al, Dutton 1	*	1850
G. S. Dudley et al, K. & K. 4	15	1632
Magnolia Pet. Co., J. A. Watkins 12	10	1538
Vergate Oil Co., Watkins 9-D	*	1085
MONTAGUE COUNTY—		
Roy I. Carter et al, Bouldin 1	15	823
Carter & Rycade Oil Corp., Cunningham 6	¶25	773
Continental Oil Co., Maddox 28-A	50	920
Petroleum Prod. Co., Howard 2	20	1426
Spencer & Rhodes, Bouldin 4	25	834
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner 1-P	*	2507
The Texas Co., Waggoner 5-B	90	2375
YOUNG COUNTY—		
Allday Oil Corp., Johnson 2	40	586
Johnson 3	130	583
J. C. Cunningham et al, Hawkins 1	230	513
Paull Oil Co., Scarborough 2	*	2243
Pennell Oil Co., Boone 1	225	515
Reed & Wooten, McKinley 1	230	518
Stewart 1	*	636
Riggs & Panhandle Ref. Co., Oatman 1	*	603
Seaboard O&G Co., Ragsland 2	*	2261
Stafford et al, Boone 1	*	705
White et al, Eddleman 1	35	2080
Wolfe et al, Lowe 2	*	880

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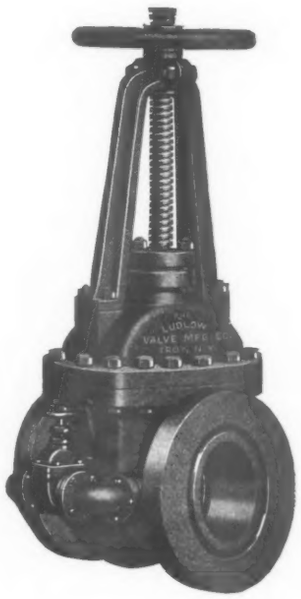

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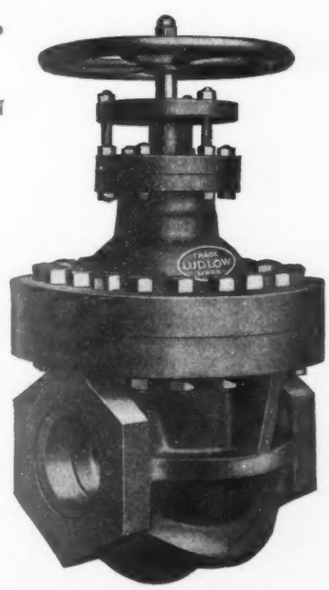

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WILDCATS FROM ALL SECTIONS

MOUNTAIN STATES

COLORADO

ARCHLUETA — Kansas-Colorado Oil Co., 17-34-2w, sd 1300 ft.

BACA—Phillips-Jones, Jones 1, 26-34-48w, sd 1745 ft.

BOULDER—Left Hand Oil Co., Prechtl 1, 34-3n-70, casing trouble at 2057 ft. Essok Oil Co., Martin 1, 5-1s-70, sd 5225 ft.

EL PASO—Grand Union Oil Co., No. 2, John Jr., 19-17s-67w, sd 775 ft.

ELBERT—Botts, Likkick et al, se 1-8-59, dr below 600 ft.

HUERFANO—Kinney-Coastal Oil Co., Pine 1, 24-26s-68, dr 1375 ft.

JACKSON—North Park Oil Co., Goettler 1, 9-6n-82w, standing at 506 ft.

JEFFERSON—Woods et al, 1, 30-3s69, lcn. Will spud soon.

LAS ANIMAS—Foley & Goldsworthy, Gov't 1, 11-30-50, standing 2010 ft. Reiter-Foster & Phillips Pet. 23-29s-56, dr 1350 ft.

LA PLATA—East Long Beach Oil Co., Aspaas 1, 10-34n-11w, dr 3187 ft. Detroit Oil Ass'n Olbert 1, 9-35-12w, sd 1610 ft.

LOGAN—Northeastern Colo. Oil Co., State 1, 36-8n-55w, cleaning out at 5565 ft.

MESA—Eureka Oil Co., Holley 2, 24-1s-1e, dr 350 ft.

MOFFAT—Ohio Oil Co., Kuykendall 1, 22-21n-11w, sd for the winter. Reiter-Foster Oil Co., State 1, 16-12-100, sd 2240 ft. Yarg Prod. & Ref. Co., 205, 26-4n-92w, dr 3504 ft. Alliance Oil Co., Milliken 1, 14-4n-92w, dr 1100 ft.

MONTEZUMA—Coon & Cotton, Hall 1, 9-35n-13w, dr 1300 ft.

MONTROSE—Indian Pet. Corp., Gilmore 1, 4-45-16w, shut down at 4210 ft.

RIO BLANCO—Texas Prod. Co., Freeman 1, 27-3-94, dr 5360 ft. Argo Oil Co., sw 9-2s-96w, standing ready to spd.

ROUTT—Great Western Oil Co., State 1, 17-60n-56w, standing at 1700 ft.

WELD—Platte Valley Pet. Corp., Patterson 1, 24-6n-61w, ur 6-in to bottom at 3760 ft.

NEW MEXICO

CHAVES — Buffalo-Roswell, 1, 24-11-27, sd 4300 ft. Arena Oil Co., 1, 18-13s-31e, dr 2950 ft. McQuigg Bros., Neis 1, 7-5w-29e, standing at 1525 ft. Berrendo O. & G. Co., Roswell 1, 5-10-27, dr 360 ft.

CURRY—Hasson Pet. Co., Laird 1, 22-8-36, spd and sd. Clovis O. & G. Co., Hoskinson 1, 21-3n-36, sd 4010 ft.

GUADALUPE—Hanchett Oil Co., Rutherford 1, 24-8-24, dr 4270 ft. Union Pet. Co., McMullen 1, 24-5n-16, sd 235 ft. Navajo Oil Co., Goard 1, 10-31-7, standing at 2538 ft.

LEA—Midwest Ref. Co., State 1, 9-19s-38e, cmtd cas, td 1560 ft. Marland Oil Co., 1, 19-26-37, dr 1100 ft. Marland Oil Co., Seideman 1, 4-25s-36e, mvg in tools. Marland Oil Co., Roberts 1, 20-23s-35e, rig complete. Marland Oil Co., No. 1 Gardner, 34-23s-31e, bldg dk.

McKINLEY—Smart & Reid, 7-17-9, rig. Inland Oil Corp., 22-18-10, dr 1130 ft. S. Dyas rt 1, 21-14-9, sd 1650 ft. Jenkins Oil Co., 1, 1-16n-9w, ur 1375 ft. Williams et al, 2, 30-18-8w, standing at 1795 ft. Reliance Oil Co., Valentine 1, 16-17-9, dr 1225 ft. Producers & Refiners, Hospah 2, 12-17-9, abn at 1881 ft.

QUAY—Gibson Oil Corporation, 1, 25-8-32, prep to deepen.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, dr 4535 ft. Kansas-Colorado Oil Co., Atterberry 1, 23-31-11, sd 1850 ft. T. C. N. Oil Co., Lanier 1, 9-29-11, sd 547 ft. Huntington Park Oil Co., 2, 29-30-9, dr 4500 ft. Nollsch et al, Mullen 1, 31-29n-9w, sd 255 ft. Fidelity Oil Co., Abrams 2, 23-29-11, dr 600 ft. Huerfano Oil Co., Wiltbank 1, 25-29-11, standing at 800 ft. Union Oil & Mining Co., Pine 2, 8-29-9, dr 3320 ft. San Juan Pet Corp., 1, 9-29n-13w, dr 2865 ft. A. Johnson, Trustee, 1, 34-29n-11w, dr at 1770 ft. Poole & Peebles, Lawson 1, 9-30n-11w, dr 870 ft. Co-Ne-Mo 1, 28-29-11, spd 117 ft. Kirtland Drlg. Co., Hunt 1, 10-29-15, dr 600 ft.

SOCORRO—Abo Oil Co., 1A, 14-3s-6e, set 12¼-in at 600 ft and sd.

TORRANCE—Duran Dome Oil Co., 1, 31-2-14, dr 1590 ft. F. G. Wilson, Trustee, Pace 1, 12-6n-27, standing at 2215 ft. Bluhall O. & G. Co., 20-6n-10e, wtg casing, td 854 ft. San Juan Coal & Oil, Randall 2, 26-6n-10e, waiting at 5155 ft for repairs.

VALENCIA — Acme Oil Co., 26-6-3, dr 2300 ft.

UTAH

DUCHESNE—Midwest Explo. Co. and Utah Southern Oil Co., Earley 1, 13-4-6, dr 3025 ft.

GRAND—Utah Oil Refining, Moab Consolidated, Utah Souther, Salt Valley 1, 18-23-21, lcn. Utah Southern-Moab Consolidated, Shafer 1, 36-26-20, dr 425 ft. Embar Oil Co., Big Six 1, 34-25-21, dr 5345 ft.

SAN JUAN—Union Oil Co. of Calif. 40 miles southeast of Moab, spotting lcn. Utah Southern, 27-41s-19e, dr in lime 1680 ft.

UINTAH—Maude Ellen Oil Co., southeast of Vernal, spotting lcn. Midwest Exploration Co. and Utah Oil Ref. Co., Vernal 3, 23-5-22, dr 2295 ft. Western Venture Oil Co., 1, 6-5-20, dr 472 ft. Maude Ellen Oil Co., 28-3-21, dr up steel 634 ft.

UTAH—Diamond Oil Co., 3, ne 28-8s-4e, dr below 600 ft, showing oil and gas.

WAYNE—Texas Prod. Co., Shipley 1, 5-27-14, run 8¼-in to shut off water, td 2990 ft. Phillips Pet. Corp., ne 16-27-16, completing road to lcn.

MONTANA

BIG HORN—Selig Oil Co.'s 1, se 21-6s-35, sd 865 ft; negotiating to complete.

CARBON—Ohio Oil Co.'s Northern Pacific 1, 11-7s-21e, dr 3900 ft. Atlantic Oil Co.'s 3, 30-7s-24e, dr below 1005 ft.

CASCADE—Lone Star's McLean 1, 12-21n-3w, sd 100 ft.

CHOTEAU—Geraldine O. & G. Co., sw ne, 1-21-11e, rigged.

FERGUS—Melton Corp.'s Fenholt 1, 24-21-17, sd 2290 ft. Mineral Research Co.'s 1, 13-17-23, bottomed at 843 ft.

GARFIELD—Carroll Bros., nw ne, 6-14n-31e, standing cemented at 1440 ft.

GLACIER—Rimrock Oil Co., 29-35-5w, rig.

HILL—A. H. McFarland, sw 15-30-13e, sd 100 ft. Gad-Hamilton et al's Goldstone 1, sw 25-35-93, rig. T. P. Jones et al's Perkins 1, 34-33-12e, dr 3380 ft, making slow progress. Jones Oil Co.'s Mangel 2, 32-34-14e, building rig.

LIBERTY—Bear's Den Oil Co.'s Laird 1, 31-37n-6e, dr 2480 ft. Sunburst O. & R. Co.'s Disotell 1, 10-37n-5e, cleaning out at 2970 ft. Western Natural Gas Co.'s Townsend 1, 21-37-4e, rig up.

MADISON—Madison County Oil Co.'s 1, ne 17-7s-1w, sd 1700 ft.

MUSSELSHELL—Manhattan Oil Co., ne 24-7-24e, sd 60 ft. McElwain Oil Dev. Assn., 2-11-22, rig.

RICHLAND—Community Drlg. Co.'s Pioneer 1, rigging to drill deeper from 2600 ft.

ROOSEVELT—Pioneer O. & G. Co.'s 1, se 35-27-51w, dr in oil shale at 2715 ft.

PONDERA—Claggett Dev. Co., 8-27-4w, spd and sd. Fulton Petroleum's State 1, 16-27-4w, run 8-in.

PHILLIPS—Big Dome Oil Co., Bloomberg 1, be 1-32-32e, sd 980 ft.

SWEETGRASS—Shoshone Consolidated, nw 23-2n-15w, resuming at 2420 ft.

TETON — Craig-Speer-McCutcheon, 9-23-2w, td 100 ft. Continental Dev. Co.'s Ritmoure 1, 8-27-5w, fsh bit 1015 ft. Genou Oil Co.'s Speer 3, 5-25-1e, dr 400 ft.

TOOLE—Hi-Line-66's Toole 1, ne 27-36n-2e, undrr 6-in to shut off cave. Sunburst O. & R. Co.'s Grandview 1, 10-34n-32, rig. Madeline Oil Co.'s Swenson 1, 33-35-4w, sd 1785 ft. Lone Eagle Oil Co.'s Barthelote 1, 20-36-2e, trying for water shut-off in Colorado shale.

WYOMING

ALBANY—Union of Calif., 33-17-75, rig up.

BIG HORN—Agate Oil Co., ne 13-51-92, pb and cemt at 842 ft. Utah-Southern Oil Co.'s 3, 29-56n-97w, dr in lime below 1680 ft. Wisconsin-Himes, 9-54-94w, delayed by title trouble, sd at 673 ft. Northern Wyoming Oil Co., 20-52n-93w, dr 1100 ft.

CARBON—Graybeal Synd., 16-28-91, sd 4380 feet.

CONVERSE—A. E. Tylee, ne 8-32-72, sd. Criterion Oil Co.'s Irvine 1, 5-31-70, dr out cemt at 3579 ft. John Ackard's McKinley 1, 21-31-69, sd 3000 ft.

FREMONT—Producers & Refiners' Muskrat 1, 34-34-92, dr 2763 ft, carrying 10-in. Texas Production Co.'s Alkali Butte 1, 1-33-92, dr 2555 ft. Zola Oil Co.'s Crook's Gap 1, 25-27-93w, sd 3750 ft. Iowa-Wyoming Inv. Co., 30-1s-2e, bottomed at 1500 ft.

JOHNSON—Fairway Oil Co.'s Crazy Woman 1, 7-47-82, set csg at 2162 ft. Tarrant Synd.'s 2, 17-46n-82w, sd 3625 ft.

LINCOLN—Fontenelle Oil Co.'s 1, ne ne 1-24n-113w, resuming at 1077 ft. California Co.'s Snyder Basin 1, 11-29-115w, td 1117 ft, standing cemented.

NATRONA—Combs Dev. Co., 12-39-78, dr 1825 ft. Spindletop Synd.'s 1, se 32-30-81, moving in material.

NIOBRARA—Penn-West Pet. Co., 13-35n-62w, bottomed at 800 ft. Hollingsworth Bros., 17-39-79, fsh.

PARK—Union of Calif.'s Taylor 1, 22-47-101, good oil showing at 3712 ft. Fred G. Ostland's Hoodoo Ranch 1, 23-51-101, sd 1740 ft. Honolulu Oil Co.'s Four Bear 1, 29-48-103, run 8¼-in at 2870 ft. E. H. Rosenburg, ne 25-58n-98w, dr 1300 ft. Ydoc Oil Co., ne 6-51n-101w, sd 915 ft. Honolulu Oil Corp.'s Pitchfork 1, 14-48n-102w, lcn. Hoodoo Oil Co., 36-51-101, straightening hole at 425 ft. Ohio Oil Co., 27-53-101, dr 2025 ft. Linco Oil Co.'s Pulley 1, 13-52-101, changing to rotary at 1050 ft.

PLATTE—Walter Adams Tr., 13-25-66, no report.

SWEETWATER—Boar's Tusk Oil Co., 16-23-104, hole obstructed at 710 ft, td 1536 ft. Prairie O. & G. Co.'s Tucker 1, 18-13-99, sd 150 ft. P & R-Marland of Colorado, 26-20-104, sd 485 ft. Tower Pet. Co.'s 1, 6-14n-103w, dr 1000 ft, carrying 15½-in. Custer Pet. Co., 24-12-100, set 12½-in at 1120 ft. Sormir Pet. Co., se 13-10-100, dr 1100 ft.

WASHAKIE—Unnamed persons, ne 15-44-64, dr suspended for the winter at 600 ft.

WESTON—Gose Synd., ne 28-47n-65w, trying to pull 4¾-in, td 4850 ft. Allen Oil Co.'s Howard 1, 15-44n-64w, resuming at 500 ft.

UINTA—Uinta O. & D. Co., 21-51n-120w, dr below 2300 ft. Evanston O. & G. Co., 27-15-120, diamond dr below 540 ft. California Co.'s 1, 12-17-116, moving in material. Wilcox & Henley, se 3-14n-118, td 350 ft. Olsen Bros., sw 6-14-118, resuming at 2275 ft.

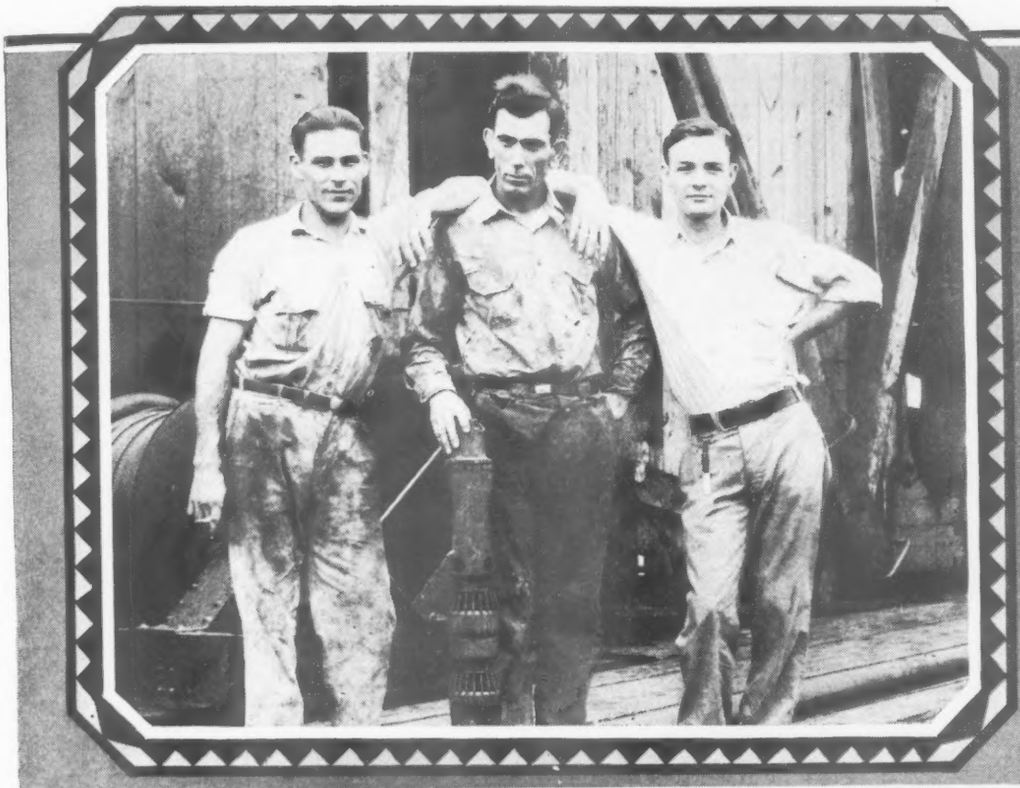
LOUISIANA

Company, Well and Location		Initial Production Bbls.	Depth
BIENVILLE PARISH—			
E. J. Forrest, Perritt 1, 11-17-6	*		3048
CADDO PARISH—			
Magnolia, Furrh 1, 28-18-16	*		2753
Texas Co., C. M. L. 47, 23-21-15 ...	*		3657
CALDWELL PARISH—			
Grayson Oil Co., Crockett 1, 6-12-4.	*		2692
LA SALLE PARISH—			
Elbert Pet. Co., Urania B 3, 7-20-2e	*		700
RICHLAND PARISH—			
Palmer Corp., Wayne 2, 23-16-5e ...	*		2525
SABINE PARISH—			
Dixie Oil Co., Steinfield 1, 20-10-12	*		3364
UNION PARISH—			
Interstate Natural Gas Co.'s Stephenson 1, 6-21-4e	*		....

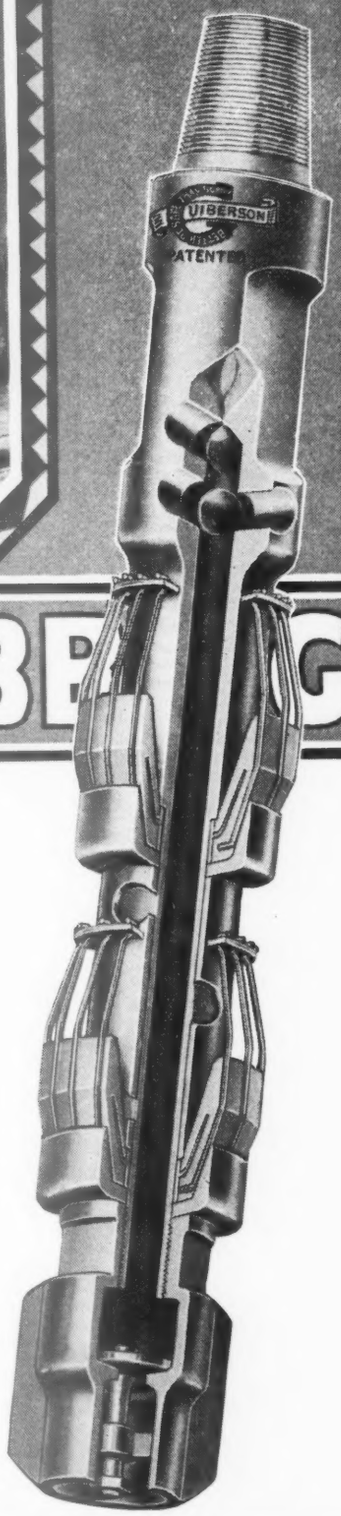
BIENVILLE PARISH—S. P. Borden's L. & A. 2, 1-15-8, sd 500 ft.

BOSSIER PARISH—Atlantic's Bain 1, 31-

NOTE—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing—ft—feet; in—inches; lcn—location—m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water—td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.



FASTER SWABBING



Speed is one of two important elements in the efficiency of the GUIBERSON Swab. The GUIBERSON is faster, both going in and coming out, because of its flexible cups, which never hang or require forcing, even in badly indented casing. This swab runs in rapidly, without jarring, and comes out smoothly and easily.

The other element in its efficiency is its ability to deliver a *full load* at the top. No other swab can equal the GUIBERSON in volume of production.

The photograph shows H. H. Sutton, driller (center) and M. D. Coffman, tool-dresser (left), employed by a large operator in the Bowlegs field. Mr. Sutton says he likes the GUIBERSON because it is *"fast and gets more fluid."* Fully patented.

"Better Be Safe Than Sorry"

The Guiberson Corporation
Box 1106, Dallas, Texas.

California Branch: 1506 Santa Fe Ave., Los Angeles
402 W. First St., TULSA
321 Osage St., PONCA CITY
506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY — GUIBERSON

Say you saw it in The OIL WEEKLY

23-11, set 6⅝-in at 3064 ft. R. L. Crook's Larkin 9, 14-19-11, lcn. Davis et al's Simpson 5, 14-16-12, sd 2230 ft. Doern et al's Bollinger 1, 9-22-11, sd 3900 ft. Ellis & Markley's Hunter 5, 14,16-12, dr 1560 ft. H. S. Goodwin Tr.'s Mercer 1, 21-16-12, dr 1900 ft; Curtis 2, 36-17-13, dr 2731 ft. Hamiter et al's Hamiter 1, 10-23-13, sd 1870 ft. Humble's B. & W. 30, 15-19-11, dr 5291 ft. Magnolia's Cason 1, 1-22-12, dr 2701 ft. J. S. McCullough's Hodges 6, 25-16-12, set 6-in at 1542 ft. Northwest La. Gas Co.'s Bollinger 3, 38-23-11, set 4½-in at 3060 ft. Natural Gas Prod. Co.'s Floyd 1, 25-23,12, set 12½-in at 400 ft. Palmer Corp.'s Roberson 1, 25-23-12, setting tubing 3068 ft; Caplis 10, 25-16-12, set 4½-in at 1872 ft. R. O. Roy's Werner 1, 7-17-11, dk; Caplis 7, 25-16-12, dr 885 ft. Texas Co.'s Wilkerson 2, 36-23-12, arr to shoot 3081 ft. Sales & Walker's Kilgore 1, 31-23-11, set 6-in at 3054 ft. Walker et al's Antrim 1, 28-22-13, sd 2850 ft. Woodley & Collins' L. & A. 3, 15-23-12, sd 3250 ft; Bain 1, 31,23-11, coring 3055 ft; Bollinger 1, 36-23-12, sd 3050 ft.

CADDO PARISH—Bee Oil Co.'s Muslow 1, 29-20-15, sd 1125 ft. J. W. Burton Tr.'s Caldwell 8, 18-21-15, dk. Belchic & Laskey's Sharp 4, 10-18-14, set 8-in at 2150 ft; Sharp 5, 10-18-16, lcn. W. D. Chew's State 6, 34-21-16, dk. Dixie Oil Co.'s Robertshaw 81, 13-21-15, dr 4057 ft; Robertshaw 90, 14-21-15, wosr 4054 ft; Robertshaw 91, 14-21,15, set 15½-in at 131 ft; Robertshaw 92, 1321-15, arr to test 4075 ft; Huckaby 4, 11-21-15, dr 3978 ft. Greenwood Prod. Co.'s Cooper & Ellerbe 1, 15-18-14, abn 3234 ft. Haynes Bros.' Spell 1, 15-21-15, sd 3911 ft; Spell 2, 15-21-15, sd 3092 ft. Magnolia's W. M. Bell 2, 6-17-16, dr 1400 ft. Dillon 18, 24-21-15, dk; Dillon 21, 23-21-15, lcn; Robertson 22, 23-21,15, set 8½-in at 3871 ft; Hampton A-8, 15-21-15, coring 4002 ft. Pittsburgh O. & D. Co.'s Herndon 1, 15-21-15, tested sw at 4017 ft. D. C. Richardson's Youree 6, 30-20-15, set 6-in at 2233 ft. Shreveport Oil Corp.'s Muslow 2, 32-21-15, lcn. Simplex Oil Co.'s Baird 2, 22-20-15, wosr 2225 ft; Thomas et al 3, 15-20-15, wosr 2355 ft. Standard's Barry 12, 11-20-16, tested dry 1500 ft; Stiles 190, 27,21-16, sd 1984 ft; Barry B-1, 11-20-16, dr 709 ft. Texas Co.'s Hutchinson 5, 15-15-12, dr 108 ft; Herndon 9, 14-21-15, resetting liner 3907 ft; Raines 19, 15-21-15, sd 4457 ft; Noel B-13, 14-21-15, tested sw 3979 ft. Tubbs et al's Hines 1, 16-14-16, sd 2730 ft.

CATAHOULA PARISH—Leonard Pet. Co.'s Knott 1, 32-11-8e, rig. Lochnager Oil Co.'s Beasley 3, 26-9-6e, sd 2000 ft. Standard's Tensas 1, 23-8-5e, sd 3697 ft.

CLAIBORNE PARISH — El Dorado Chief Oil Co.'s Jones 1, 8-20,6w, set 12½-in at 89 ft. Rudeseale et al's Meadows 1, 20-21-7, rebldg dk 2920 ft.

DE SOTO PARISH — American Controlled Oil Co.'s Lanier 2, 5-11-11, moving in rotary 2790 ft. Benson Oil Co.'s Wolf 2, 3-10-13, set 6¾-in at 2870 ft. Carlton Drlg. Co.'s Stevens 1, 12-11-16, plugged back to 1530 ft. Dixie's Jenkins 1, 9-12-11, dr 6124 ft. Foster et al's Johnson 1, 7-10-12, sd 3210 ft. Hazlett Simmons Neely 2, 1-14-12, sd 1925 ft. R. O. Roy's Lee 1, 33-14-12, dk; Whittaker 1, 4,13-13, set 10-in at 220 ft; Tracy 1, 3-13-13, rig. Reliance Drlg. Co.'s Jones 1, 8-11-14, sd 3018 ft. Texas Co.'s Grand Bayou P. Co. 5, 25-13-12, blg 2460 ft. Wingfield et al's Haygood 1, 18-10-12, sd 2400 ft.

FRANKLIN PARISH—Pittsburgh O. & D. Co.'s Moore 3, 12-11-6e, sd 2501 ft. Louisiana Pet. Co.'s Tensas 1, 11-11-6e, sd 2503 ft.

GRANT PARISH—W. D. Ball's Calhoun 2, 4-7-4, set 10-in at 120 ft. Swope et al's Fee 3, 18-9,1e, sd 1607 ft; Fee 5, 18-9-1e, set 6-in at 1594 ft.

LA SALLE PARISH — Wingfield et al's Gibson 2, 2-9-1e, sd 3073 ft; Gibson 3, 2-9-1e, set 6-in at 1495 ft.

MADISON PARISH—W. S. Smith's Yerger 1, 51-16-14e, arr to deepen 1700 ft.

MOREHOUSE PARISH — Chas. Bennett Davis 1, 2-20-4e, dk. Elbert Pet. Co.'s Morehouse Plg. Co. 1, 40-19-7e, set 10-in at 188 ft. Moody & Seagraves' Wolfe & McInnis 1, 13-20-4e, set 6-in at 2124 ft. Texas Co.'s Meyer 1, 15-22-7e, dr 2370 ft. United Carbon Co.'s Atkins 1, 26,20-5e, dk. Bastrop P. & P. Co. 1, 18-21-6e, set 12-in at 187 ft.

NATCHITOCHES PARISH — Lawson & Pharris' Crowell Lbr. Co. 1, 22-5-6w, sd 2758 ft.

OUACHITA PARISH—Coco Bend O. & G. Cordell 1, 23-15-3e, sd 2712 ft. Imperial O. & G. Co.'s Stubbs 4, 13-19-3e, ¶2 at 2212 ft; Stubbs 5, 13-19-3e, set 12-in at 190 ft. Jordan Drlg. Co.'s Slagle 1, 48-18-4e, dk; McGee 2, 10-18-4e, set 6-in at 2167 ft; Pereboon 1, 32-19,4e, dk. Natural Gas & Fuel Corp.'s McEnery 1, 21-19-4e, rig. Peerless Carbon Co.'s Moore 3, 49-20-4e, set 6-in at 2123 ft. Palmer Corp.'s Central 2, 1-19-4e, set 6-in at 2116 ft. United Carbon Co.'s Nelson Fee 2, 6-19-5e, dr 2117 ft. J. O. White Tr.'s Schmidt 1, 3-15-4e, set 12½-in at 194 ft.

RAPIDES PARISH—Collins Bros.' Allen 1, 25-5-1w, sd 2200 ft. Minnesota Oil Corp.'s Wetty Mark 2, 13-5-4w, sd 12 ft.

RICHLAND PARISH—J. M. Fuller Boise 1, 33-16,6e, lcn. Gulf's Millsaps 1, 8-17-6e, dr 2928 ft. Rhymes 3, 28-17-6e, set 9-in at 2310 ft; Weymond 1, 20-18-6e, tested sw at 2382 ft; Moody & Seagraves McDonald 1, 9-15-5e, dr 2342 ft; Sartor C-1, 17-16-5e, set 10-in at 900 ft; Sartor A-1, 8-16-6e, set 10-in at 925 ft; Sartor B-1, 9-16,6e, rig. Natural Gas & Fuel Corp.'s Sartor B-3, 19-16-6e, lcn; Sartor B-4, 18-16-6e, lcn; Thomason C-2, 21-16-6e, junked hole 290 ft; Thomasson C-3, 21-16-6e, set 10-in at 926 ft. Noe & Meredith Tr.'s Broughton 1, 4-15-6e, set 6-in at 2286 ft. Oliver & Mc,Master's Hatch 1, 2-15-5e, set 15½-in at 150 ft; Hatch 2, 2-15-5e, set 6-in at 2285 ft. Ouachita Nat. Gas Co.'s Cummings 1, 24-17-5e, dr 2373 ft. Southern Carbon Co.'s Sartor 2, 20-16-6e, set 6-in at 2280 ft; Sartor 5, 18-16-6e, dk; Spann 1, 8-16-6e, set 6,in at 2297 ft. United Carbon Co.'s Mulhern 1, 20-16-6e, testing 2440 ft. Woodley Pet. Co.'s Osborne 1, 3-17-7e, set 10-in at 1091 ft.

SABINE PARISH—S. P. Borden's Hamlin Est 1, 28-10-13, sd 145 ft. Doern et al's Pickering 1, 17-4-11, set 6-in at 3151 ft. R. L. Gray's (formerly L. M. Emlet) Mansfield 1, 15-7-14, set 10-in at 80 ft. Ruffian et al's McLeroy 1, 33-10-12, set 6⅝,in at 3151 ft. Zwolle O. & G. Co.'s Bowman Hicks 7 (formerly Emlet), 11-7-14, arr to test 3880 ft.

UNION PARISH—Barbour Oil Co.'s Tugwell 1, 21-22-1e, dr 2405 ft. Carter et al's Security Trust 1, 7-23-1, sd 2250 ft; Hudson 1, 7-23-1e, sd 102 ft. Industrial Gas Co.'s Hill 2, 9-20-3e, set 8-in at 921 ft. Interstate Nat. Gas Co.'s Parks 1, 23-20-3e, dk. Moody & Seagraves' Robertson 1, 34,22-3e, set 12½-in at 176 ft. John Potts Agt's Bernstein 1, 30-20-4e, testing 2155 ft. Ruston Drlg. Co.'s Steele 1, 36-20-3e, set 6-in at 2167 ft.

WEBSTER PARISH — Arkansas Nat. Gas Co.'s Mitchell 1, 30-23-9, lcn. S. A. Lanes' Miles 1, 24-17-9, sd 1469 ft. H. C. Lyon's Porter-Wadley 1, 36-23-10, set 6-in at 2675 ft. Magnolia's Bailey 1, 29-23-9, rig; Camp 1, 36-23-10, dk; Aarnes Cox 3, 22-21,10, dk; Mixon 1, 22-21-10, dr 4214 ft; Cole 1, 27-21-10, set 6⅝-in at 4340 ft; J. L. Munn 1, 36-23-10, ¶3½ at 2704 ft; R. J. Munn 1, 29-23-9, dr 2453 ft; D. G. Cox 1, 22-21-10, waiting for casing 4309 ft; Mitchell 1, 31-23-9, dk. Harry Morris et al's Lewis 1, 15-23-9, rig. Ohio's Crichton 2, 21-21,10, dr 4299 ft; Bodcaw 38, 15-21-10, set 6⅝-in at 4250 ft. Sun Co.'s Haines 1, 30-23-9, lcn. Woodley Pet. Co.'s Cox B-1, 23-21-10, cmtd back to 4512 ft. C. H. Lyons Sexton 1, 36-23-10, testing 2642 ft.

WINN PARISH—Ohio's Rolen Account 1, 5-12-1w, tested dry 4637 ft. H. M. Roark's Southern Mineral Co. 3, 9-11-3w, dr 990 ft.

WEST CARROLL PARISH—Palmer Corp.'s White 1, 2-19-10, sd 2849 ft.

ARKANSAS

Company, Well and Location	Completions	Initial Production Bbls.	Depth
MILLER COUNTY—			
Guess et al, Saunderson 1, 14-15-26..	*		3032
UNION COUNTY—			
Lion O. & R. Co.'s Leverette 1, 11-16-16	*		2770

BRADLEY COUNTY—Johnson & Adams' Southern Lbr. 1, 12-12,12, dr 2675 ft.

CLARK COUNTY — McKenzie Oil Co.'s Eaken 1, 9-11-19, set 10-in at 62 ft.

COLUMBIA COUNTY — Geo. Dawley's Gantt 1, 12-17-22, set 12½-in at 80 ft. Mitchell et al's Franks 1, 25-19-22, sd 150 ft. Van Hagen Synd.'s Pickler 1, 19-19112, sd 850 ft; Mason 1, 31-19-22, rig.

GRANT COUNTY—Jones et al's Meeks 1, 5-4-11, sd 1400 ft.

LINCOLN COUNTY—Pine Prairie O. & G. Co.'s Carter 1, 23-10-6, sd 2176 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 2-13-31, sd 2941 ft.

MILLER COUNTY — Dave Bruton et al's Red River Farm 1, 2-17,26, set 10-in at 50 ft. Lenze et al's Dale 3, 23-15-26, set 10-in at 108 ft.

NEVADA COUNTY — Autrey Oil Co.'s Haynie F-1, 6-14-20, set 10-in at 60 ft. Aines & Zingg's Womack B-1, 10-14-21, wosr 1215 ft. McDonald et al's Pell 1, 9-15-22, sd 2424 ft. J. J. O'Brien's Haynie B-5, 1-14-21, plugged back to 1163 ft; Moss A-17, 1-14-21, rig.

OUACHITA COUNTY—Little Fay Oil Co.'s Robertson 4, 25,15-16, set 6⅝-in at 2005 ft. Ohio Oil Co.'s Cramer 7, 22-15-16, dr 2240 ft.

UNION COUNTY—C. H. Allison's Fitzgerald 10, 17-18-15, running sand pump 2175 ft. Grimes Bros.' Hill 2, 7-18-14, rig. E. M. Jones' Crain 3, 2-17-14, arr to abn 4014 ft. W. R. Keever's Kavanaugh 1, 12-17-15, wosr 2143 ft. Laurel Oil & Gas Co.'s Houston 1, 12-16-16, sd 2725 ft. Lyall et al's Stegall 1, 11-17-13, coring 2159 ft. Magna Prod. Co.'s Rowland 1, 14-17-14, testing 2999 ft. Magnolia Pet. Co.'s Carroll 2, 1-17-14, sd 1500 ft; Laney 3, 8,16-16, dk; Laney 4, 8-16-16, dk. Mellon Tr.'s Van Hook 1, 7-18-14, set 10-in at 142 ft. Mountz et al's Pratt 6, 8-18-15, dr 2166 ft. C. E. Murdock's Murphy 2, 17-16-15, sd 2117 ft. Morefield et al's Hill 1, 7-18-14, wosr 2228 ft. National Consolidated Pet. Corp.'s Fagg 1, 8-16-16, wosr 2643 ft. Ohio Crain 4, 1-17,14, dk; Goode 2, 2-17-14, sd 054 ft. Oil Well Corp.'s Dumas 1, 11,17-14, sd 3099 ft; Townsend 1, 10-17-14, milling casing 2600 ft. Pure's Gregory 1, 10-17-14, tested dry 2952 ft. Dr. Rushing et al's Gregory 1, 11-17-14, sd 2740 ft; Gregory 2, 11-17-14, sd 2570 ft. Rovenger Oil Corp.'s Perdue A-1, 10-17-14, rig. Rhodes Tr.'s Union Saw Mill 1, 14-19-11, rig. Simroll et al's Finley 1, 12-17,14, tested dry 3010 ft. Simmons et al's Green 1, 3-16-16, dk. Timberlake et al's Dumas 1, 11-17-14, rig. W. R. Keever's Ezell B-2, 12-17-15, set 10-in at 105 ft.

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
Cook et al, Furrh 1, J. Short sur....	*	1020
SMITH COUNTY—		
Humble, Van Hovenberg 1, Nancy Childs sur	*	567

ANDERSON COUNTY—Brooks et al's Henby 1, Joseph Merts sur, dk. Humble O. & R. Co.'s Jones Jr. 1, David Roberts sur, set 10-in at 120 ft.

CAMP COUNTY—J. C. Rogers' Boyd 1, R. M. Montgomery sur, sd 750 ft.

CASS COUNTY—Hickman et al's Mott 1, A. Douthit sur, sd 202 ft.

CHEROKEE COUNTY—Panhandle Oil Co.'s Whalen 1, J. Jordan sur, sd 1300 ft. Joe Walter et al's Barns & DeLoach 1, Perry Reese sur, sd 1112 ft.

FREESTONE COUNTY—Roxana Pet. Corp.'s Marshall 1, D. E. Marshall sur, abn 777 ft.

HENDERSON COUNTY—W. K. Cayton et al's Hoffer & Nash 1, H. Jefferson sur, sd 2910 ft.

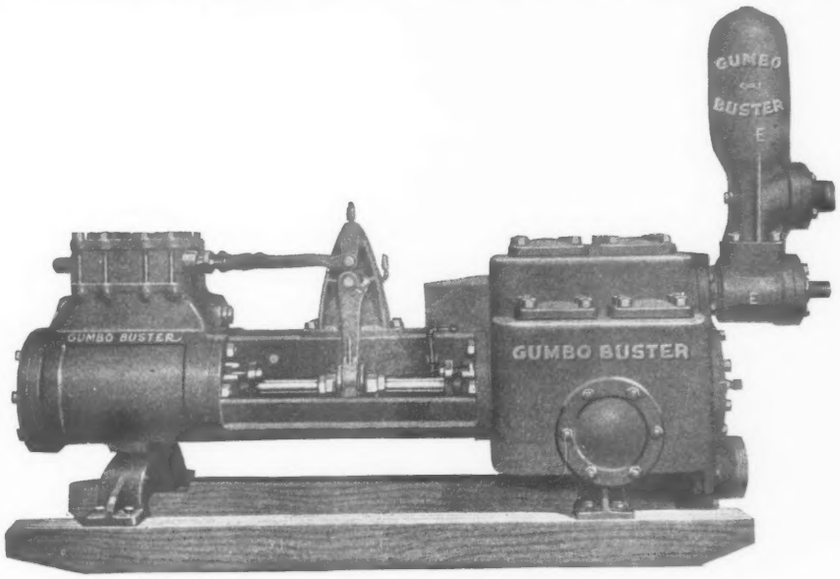
HARRISON COUNTY—Doney et al's Furrh 2, J. Lipscomb sur, rig. Fuller & Fuller's Furrh 2, J. Short sur, set 6-in at 973 ft. Mississippi Waskom Gas Co.'s Bush 2, R. W. Bedford sur, se 10-in at 104 ft. Mitchell et al's Jones 1, J. Lipscomb sur, sd 957 ft. State Line O. & G. Co.'s Waterman 6, J. Short sur, cemt back to 2385 ft and set 6-in at 2315 ft. Tylong O. & G. Co.'s Armstrong 1, S. Holloway sur, set 6-in at 1957 ft. Waterman Drlg. Co.'s Hickman 5, E. Pollack sur, set 10-in at 204 ft.

MARION COUNTY—Lumbermans Oil Co.'s Bonham 1, R. Potter sur, sd 1200 ft. Trimont Pet. Co.'s Stiles 7, N. Gupton sur, dk.

NACOGDOCHES COUNTY—P. R. Harris et al's Griffin 1, J. W. Anderson sur, sd 1301 ft. Stein & Lewis' Birdwell 1, Jose A. Chirino sur, arr to deepen 1100 ft. Union Sulphur Co.'s Whitermark 1, Jose A. Chirino sur, set 12½-in at 65 ft in second hole.

PANOLA COUNTY—S. H. Gardner et al's Roquemore 3, B. C. Jordan sur, testing 2285 ft; Craven 1, Ben C. Jordan sur, set 10-in at 101 ft. H. Hines' Baker 1, G. Goodwin sur, sd 1650 ft. Magnolia Pet. Co.'s Davis 2, J. M. Mathews sur, dk; Adams 1, J. M. Birdsong sur, rig; Tillery 1, Jane Thorpe sur, dr 2352 ft; Baker 3, B. C. Jordan sur, testing 983 ft; Leigh Trosper 1, B. Stephens sur, set 6-in at 1936 ft;

"GUMBO BUSTER"



Gumbo Buster F Slush Pump

1. SIZE—12" x 6¾" x 16".
   The Gumbo Buster F Pump was the first slush pump to use the long sixteen inch stroke, which decreases the number of reversals, thereby increasing the life of the valves, seats and all moving parts.
2. VALVE AND VALVE SEATS
   The Gumbo Buster F Pump was the first to use the 45 degree taper valve and seat, which increases the life of valve and seat.
3. FLUID END
   The Gumbo Buster F Pump was the first to use a fluid end so designed that the fluid enters the liners making but two right angle turns instead of four as in previous designs, thus allowing fluid end liners to fill quickly and easily under any steam pressure and at all speeds. Fluid ends tested to 1000 pounds pressure.
4. STEAM PRESSURE
   The Gumbo Buster F Pump was the first slush pump so designed that it would work satisfactorily and economically with 200 pounds steam pressure.
5. PROVEN
   There are several hundred Gumbo Buster F Pumps in actual operation under the severest conditions.

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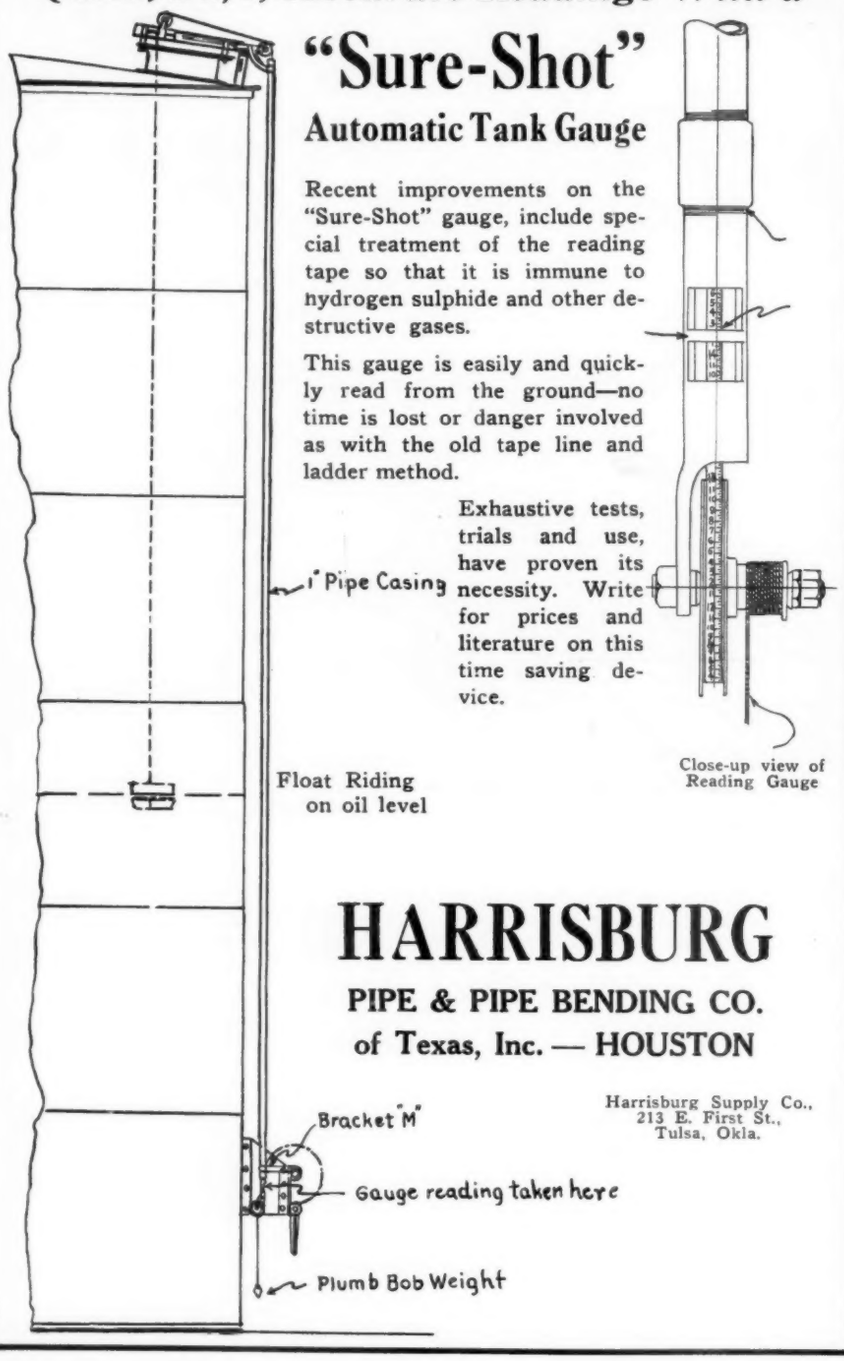

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Franklin, Penna.

Products That Cut Down Your Underground Overhead

Steele 14, B. C. Jordan sur, set 5⅝-in at 2287 ft. Natural Gas & Fuel Corp.'s Adams 2, Evans Bracken sur, set 10-in at 100 ft. D Thomasson's Crenshaw 3, J. Womack sur, dr 2150 ft. The Texas Co.'s Adams B-8, Isom Hatcher sur, set 6-in at 1010 ft.

RUSK COUNTY—C. M. Joiner et al's Bradford 1, J. Ximines sur, hole junked 1110 ft and skidding over. Magnolia Pet. Co.'s Durren 1, Agulla Norris sur, dk. McCurrie et al's Sparks 1, Jessee Coarse sur, sd 2148 ft. D. Osborne et al's Mathews 1, D. Cortinas sur, sd 2330 ft.

SHELBY COUNTY — Magnolia's Pickering Lbr. Co. 1, Wm. J. Crane sur, sd 3805 ft.

SMITH COUNTY—Gulf Ref. Co.'s McCarmond 1, Vincent Moore sur, set 10-in at 550 ft.

UPSHUR COUNTY — S. W. Richardson's Newsome 1, J. R. Davis sur, sd 2025 ft; Minor 1, A. Lowery sur, fsh 3500 ft.

OKLAHOMA

T 28n, 3w, Grant County—Sec 6, Otstot Dev. Co.'s Snyder 1, ne c, sd 4518 ft.

T 27n, R 21w, Harper County—Sec. 24, A. F. Kopison Oil Co.'s Selman 1, ne c se, spd and sd.

T 27n, R 15w, Woods County—Sec 20, Sooner State Oil Co. & E. R. Black, Marcum 1, c sw, spd and sd.

T 27n, R 5w, Grant County—Sec 18, J. W. Bailey et al, Custard 1, c se, show oil and gas 4628-34 ft, ts 4835-42 ft, td, 800,000 gas, sd for cas.

T 27n, R 2w, Kay County—Sec 23, Boucher et al,'s Cooper 1, se c, swedging 12-in cas, 1435 ft. Sec 25, Marland Oil Co. & Boucher's Woods 1, ne c se, dr 1755 ft.

T 27n, R 1e, Kay County—Sec 8, Mathews et al's Buessing 1, nw c, cellar.

T 26n, R 4w, Grant County—Sec 34, Sooner State Oil Co.'s Royce 1, sw c nw, sd 550 ft.

T 26n, R 2w, Kay County—Sec 34, J. H. Markham, Jr., McGaha, sw c ne, ts 1750-65 td hfw, fsh1 joint of cas and show.

T 26n, R 2e, Kay County—Sec 32, J. A. Vincent & National Union Oil Co.'s McNeal 1, nw c ne, sd 2795 ft.

T 25n, R 22w, Harper County—Sec 14, Hoffer Oil Co.'s Cooper 1, nw c se, sd 4182 ft.

T 25n, R 4w, Grant County—Sec 22, Cowden's Vallner 2, ne c se ne sw, fsh bit 5640 ft.

T 25n, R 1w, Kay County—Sec 15, Tonkawa Dev. Co.'s McDaniels 1, se c, sd 4434 ft.

T 25n, R 1e, Kay County—Sec 10, Miller Brothers' Anderson 1, nw c se, hfw 3852-80 ft, chat 4132-59 ft, show oil, hfw, sand 4159-65 ft, wtr, td 4165 ft plugging.

T 21n, R 1w, Noble County—Sec 7, R. L. Corley's Williams 1, se c ne sw, sd 1920 ft.

Oklahoma Panhandle

T 6n, R 2e, Cimarron County—Sec 24, Jake G. Phillips' School Land 1, nw c, dr 4265 ft.

T 5n, R 2e, Cimarron County—Sec 22, Sinclair O&G Co.s School Land 1, nw c, dr 4713 ft.

T 5n, R 6e, Cimarron County—Sec 4, Ramsey Brothers' School Land 1, se c, top 4095 ft, show 35 bbls, shot 30 qts 4090-4140 ft, td, 4670-81ft, hfw, pb to show 4095-4150 ft, plugging off water 4140 ft.

T 4n, R 1e, Cimarron County—Sec 34, Ramsey Pet. Co.'s School Land 1, c se, dr 3465 ft.

T 4n, R 25e, Beaver County—Sec 22, O. H. Bonner et al's Maple 1, se ne, rig.

T 3n, R 15e, Cimarron County—Sec 17, Texas County Gas Co.'s Barbee 1, c ne ne, sd 990 ft.

T 2n, R 9e, Cimarron County—Sec 2, Fenton, Brookins & Flowers' Smaltz 1, sw c ne ne, spd and sd.

T 2n, R 18e, Texas County—Sec 23, Connelly, Trammell & Danner's Graves 1, ne c sw sw, sd 315 ft.

T 1n, R 15e, Texas County—Sec 26, Hydraulic Oil Co.'s Hitch 1, ne c, sd 600 ft.

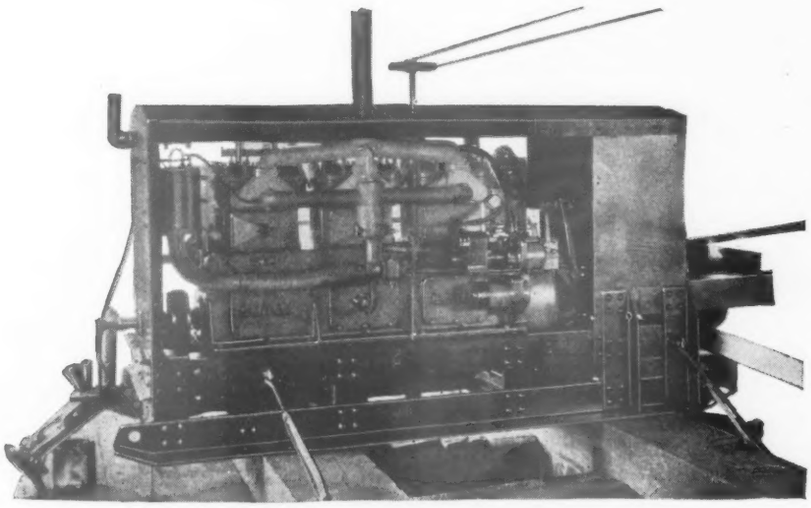
T 1n, R 19e, Texas County—Sec 5, Trammell, Connelly & Danner's Taney 1, se c nw, sd 280 ft.

T 1n, R18e, Texas County—Sec 11, Three Way Oil Co.'s Price 1, se c nw, show gas 2560-2620 ft, water 2990-3006 ft, sd, ts 3318-58 ft, td, hfw, sd.

T 24n, R 17w, Woodward County—Sec 32, Otstot Dev. Co.'s Simmons 1, se c, sd 1500 ft.

T 24n, R 6w, Garfield County—Sec 9, Pulse & Beamer's White 1, se c nw, sd, water at 4720 ft.

DEEPEST HOLE IN WEST TEXAS



Down 5950 Feet And Still Going

F. S. Lane, drilling superintendent for the Magnolia Petroleum Company, has been using a Climax High-Speed "Paymaster" Drilling Unit on the W. E. Whitehead well No. 1, Val Verde County, Texas, near Del Rio. In a recent letter to Climax, he reports that this drilling unit has already reached a depth of 5950 feet—and that it is still drilling. The Climax High-Speed "Paymaster" is a 6-cylinder drilling unit with plenty of "stuff" for drilling —for pulling bail—and for pulling casing.

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Of the 24 drilling wells in Howard County, Texas, 11 are using Climax High-Speed "Paymaster" engines. And in the Chalk Pool, over 50% of the wells are drilling with Climax High-Speed "Paymaster" drilling units.

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T 24n, R 3w, Garfield County—Sec 14, Sagar Oil Co.'s Garsarch 1, se c, dr 4790 ft. Sec 24, Marland Oil Co.'s Disney 1, c nw sw, dr 4965 ft.

T 22n, R 5w, Garfield County—Sec 3, Ashby & Barr's Swinery 1, nw c, sd 740 ft.

T 21n, R 25w, Ellis County — Sec 9, Okla. Northern Oil Co.'s 1, c se nw, sd 300 ft.

T 21n, R 19w, Woodward County—Sec 15, Burgoyne Brothers' 1, sw c se ne, dr 360 ft.

T 21n, R 21w, Woodward County — Sec 25, Sharon's Elmore 1, sw c, sd 2778 ft.

T 21n, R 4w, Garfield County—Sec 12, Beopple et al's Schriver 1, c e l sw sw ne, sd 1850 ft.

T 20n, R 4w, Garfield County—Sec 9, Marland Oil Co.'s Looman 1, ne c se, sd 5735 ft, orders, cas parted. Sec 12, Marland Oil Co.'s Miller 1, sw c, sd 4586 ft.

T 18n, R 4w, Logan County—Sec 8, Champlin Ref. Co.'s Musgrove 1, se c sw, dr 4760 ft, hfw.

T 18n, R 15w, Dwyer County—Sec 9, Huckleby &McCoy's Perfect 1, ne c, sd 3274 ft.

T 18n, R 4w, Logan County—Sec 6, Davis & Brownin's Woods 1, ne c se, lcn. Sec 11, Welch, Acton & Brown's Hall 1, ne c se, sand 4748-85 ft, flowed 60 bbls, dr 6265 ft.

T 18n, R 3w, Logan County—Sec 33, Haley & Consoildated Dr. Co.'s Quier 1, se c sw, ur 6-in 3750 ft.

T 17n, R 1e, Logan County—Sec 20, T. B. Slick's Signs 1, nw c sw, sd 5067 ft. Sec 28, T. B. Slick's Berry 1, sw c se, hfw 5305-30 ft, ur 5-in at 5330 ft, dr to 5607 to run 5-in cas.

T 16n, R 7w, Kingfisher County—Sec 6, Pet. Eng. Core Drlg. Co.'s Campbell 1, c nw se, rig.

T 16n, R 6w, Kingfisher County—Sec 27, Crawford & McKenna's Sturgeon 1, ne c sw, ur 6-in cas 3800 ft.

T 16n, R 5w, Kingfisher County—Sec 26, Gault Brown Oil Co.'s Johnson 1, c nw, hfw 4185-4205 ft, sd for 5-in 4370 ft.

T 16n, R 1w, Logan County—Sec 28, Blackford O&G Co.'s Lair 1, c s l n½ se, sd 1675 ft, litigation.

T 15n, R 1w, Logan County—Sec 12, Bu-Vi-Bar's Kirkpatrick 1, c sw, sd 405 ft.

T 14n, R 6w, Canadian County—Sec 9, A. D. Spears' Piatt 1, se c ne, sd 3223 ft.

T 13n, R 3w, Oklahoma County—Sec 18, Slick & Bailey's Lufkin 1, c ne se, r. u. s. t. 3750 ft.

T 12n, R 3w, Oklahoma County—Sec 15, Cromwell et al's Thompson 1, sw c ne ne, dr 6845 ft, hfw.

T 11n, R 7w, Canadian County—Sec 9, Ramsey Brothers' Newman 1, c s l ne, dr 4100 ft.

T 10n, R 6w, Canadian County—Sec 1, J. M. V. Bailey's Robinson 1, c ne nw, spd and sd.

T 27n, R 12e, Osage County—Sec 6, Wa-Sha-She Oil Co.'s 1, c n l s½ ne, dr 1900 ft.

T 26n, R 8e, Osage County—Sec 13, Stephenson, Henry & Rock's 1, sw c nw sw, rig.

T 25n, R 6e, Osage County—Sec 4, Kay County Gas Co.'s 1, se c sw, sand 3347-48 ft, td, hfw, dry and abnd.

T 25n, R 7e, Osage County—Sec 8, I. T. I. O. Co.'s 1, se c ne, dr 3036 ft, top Wilcox.

T 23n, R 7e, Osage County—Sec 9, Kay County Gas Co.'s 3, sw c se se, dr 2840 ft.

T 23n, F 10e, Osage County—Sec 7, Sheeders Oil & Gas Co.'s 1, c ne, fsh tools 2340 ft.

T 19n, R 1e, Payne County—Sec 33, Gardner Pet. Co. et al's Ham 1, c sw ne, dr 4203 ft.

T 18n, R 3e, Payne County—Sec 32, Garber, Pulse & Gloyd's Widows 1, ne c se nw, sd 1200 ft.

T 17n, R 13e, Lincoln County—Sec 20, Willis O&G Co.'s Gunn 1, nw c se, ts 4636-77 ft, water, sd.

T 17n, R 5e, Lincoln County—Sec 27, Flynn & Morgan's Smith 1, se c ne nw, dr 1510 ft.

T 14n, R 7e, Creek County—Sec 11, Lima O&G Co.'s Grayson 1, nw c ne ne, dr 3697 ft. Sec 16, Bu-Vi-Bar's Nero 1, c se ne, 1558-64 ft, show gas and wtr, dr 1664 ft.

T 13n, R 4e, Lincoln County—Sec 16, Bu-Vi-Bar's School Land 1, c ne se, sd 4500 ft.

T 17n, R 13e, Tulsa County—Sec 1, E. A. Hawley's Taylor 1, se c ne, spd and sd.

T 15n, R 9e, Creek County—Sec 33, C. G. Tibbens' J. Marshall 1, sw c se sw, machine.

T 14n, R 9e, Creek County — Sec 1, L. C. Wheeler & King's Morton 1, se c nw, lcn.

T 13n, R 9e, Okfuskee County—Sec 21, Laurel O&G Co.'s Self 1, sw c se ne, 10 bbls show, Dutcher 3160-68 ft, Wilcox 3898-3905 ft, hfw, dry and abnd..

T 12n, R 10e, Okfuskee County—Sec 8, Blakely et al's Yarhalo 1, sw c se nw, sd 3157 ft.

T 11n, R 10e, Okfuskee County—Sec 4, Moose & Daniels' Stidham 1, sw c nw, sd 622 ft.
T 15n, R 18e, Muskogee County—Sec 12, York O&G Co.'s G. Jobe 1, nw c se, co 1252 ft.
T 13n, R 17e, Muskogee County—Sec 34, Elk Drlg. Co.'s McKee 1, c s l se se se, sd 160 ft.
T 13n, R 18e, Muskogee County—Sec 33, L. T. Haynie's Linder 1, c se, fsh 1660 ft.
T 11e, R 13e, Okmulgee County—Sec 27, G. N. Buzzard et al's Thompson 1, nw c ne ne, Wilcox 3720-3800 ft, hfw, sd.
T 9n, R16e, Pittsburgh County—Sec 32, Pattison et al's McDuff 1, sw c nw se, ¶3 1325-90 ft, ¶2 1890-95 ft, Bradenheaded Cromwell sand, ¶3 gas 4472-4525' sd 4570 ft.
T 9n, R 18e, Haskell County—Sec 10, Marion Oil Co.'s Sanders 1, nw c ne sw, sd 2250 ft.
T 7n, R 17e, Pittsburg County—Sec 21, Quinton Spelter Co.'s Yoho 1, ne c, dr 1000 ft.
T 5n, R 18e, Latimer County—Sec 15, Limestone O&G Co.'s Murray 1, sw c, dr 1680 ft.
T 10n, R 2w, Cleveland County—Sec 22, Cromwell & Franklin's Donavan 1, c sw, sd 4706 ft.
T 10n, R 3e, Pottawatomie County—Sec 12, Sikes, Kilgore & Shaffer's Ives 1, se c se, dr 4884 ft.
T 10n, R 4e, Pottawatomie County — Sec 28, Central National Oil Co.'s Toney 1, sw c, cmtg 8-in cas 3980 ft, sd.
T 8n, R 2e, Pottawatomie County—Sec 24, Superior Oil Corp.'s Jones 1, sw c nw ne, dr 4167 ft.
T 8n, R 4e, Pottawatomie County—Sec 1, Amerada Pet. Corp.'s Gravel 1, sw c se ne, dr 3550 ft.
T 7n, R 1w, Cleveland—Sec 15, Sooner Oil Co.'s Vandeveer 1, ne c nw sw, cmtd 8-in, co.
T 7n, R 6e, Seminole County—Sec 7, Simon & Beam's Palmer 1, ne c nw ne, rig.
T 7n, R 7e, Seminole County—Sec 32, I. T. I. O. Co.'s Marshall 1, nw c sw, fsh 4759 ft.
T 7n, R 8e, Hughes County—Sec 21, Jarvis & Holmes' Street 1, nw c se nw, td 4362 ft, hfw, pb to 3090-3150 ft, shot 150 qts, 115 bbls.
T 6n, R 2e, Pottawatomie County—Sec 10, Davis, Detrick et al's McGahey 1, se c nw, sd 4988 ft.
T 6n, R 6e, Seminole County—Sec 1, T. B. Slick's Moore 1, sw c ne sw, ts 2750-53 ft, td 1000 ft, fluid heavy oil, ur 6-in.
T 6n, R 7e, Seminole County—Sec 5, Magnolia's Vierson 1, se c nw, dr 3480 ft. Sec 36, Gardner et al's Harris 1, nw c se, ur 6-in 2865 ft.
T 6n, R 8e, Seminole County—Sec 18, Carter Oil Co.'s Phillips 1, nw c ne nw, owd, 3936 ft, ur 6-in cas.
T 5n, R 5e, Seminole County—Sec 13, Shaffer O&R Co.'s Isaacs 1, c ne sw, setg 6-in 2545 ft.
T 5n, R 6e, Seminole County—Sec 13, T. B. Slick's Barrett 1, ne c se nw, tvl 3645 ft, td 3798 ft, ½ bailer wtr per hr.
T 5n, R 9e, Hughes County—Sec 17, E. W. Whitney's Ruddlestone 1, se c sw, fsh 850 ft. Sec 20, Noble O&G Co.'s Wickett 1, se c dr 1000 ft.
T 10n, R 12w, Caddo County—Sec 28, Magnolia Pet. Co.'s Selby 1, sw c, dr 1880 ft.
T 9n, R 22w, Beckham County—Sec 32, O&H Pet. Co.'s Barnes 1, nw c ne, owd, td 3080 ft, 300 ft oih, sd for control head.
T 9n, R 5w, Grady County—Sec 13, Remington's Fulton 1, sw c ne, sd 720 ft.
T 6n, R 10w, Caddo County—Sec 22, English Drlg. Co.'s Jacobs 1, nw c se, sd 3540 ft.
T 6n, R 12w, Caddo County—Sec 22, English Drlg. Co.'s Jacobs 1, nw c se, sd 3540 ft.
T 6n, R 12w, Caddo County—Sec 29, W. J. Hartley's Gilbreath 1, se cor nw se, owd, sd 3394 ft.
T 5n, R 7w, Grady County—Sec 7, Nicholos & Page's Drake 1, c e l se, sd 1900 ft.
T 3n, R 10w, Comanche County—Sec 24, Jolly & Ogg's Sparlin 1, s e c ne, dr 1538 ft.
T 2s, R 16w, Kiowa County—Sec 6, Landfair 1, se c sw se, dr 2333 ft.
T 5n, R 4e, Pontotoc County—Sec 12, Gillespie et al's Fleming 1, sw c se, sand 2545-2565 ft, swab 25 bbls and sd.
T 4n, R 1e, Garvin County—Sec 15, Dixie Oil Co.'s Perkins 1, se c nw, dr 4655 ft, hfw.
T 4n, R 3e, Garvin County—Sec 10, Garland Oil Co.'s Strickland 1, sw c nw sw, sd 2650 ft.

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Star No. 44ST Machine cleaning out on Wolverine Oil Co. lease at Avant, Oklahoma.

The Star 44ST Machine is equally efficient on bailing—pulling rods and tubing—pulling casing—cleaning out—drilling old wells deeper—swabbing—drilling in after rotary—plugging wells, etc. It can be kept busy on even a small lease and will pay for itself in savings effected.

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The Star Drilling Machine Co.
Akron, Ohio.

Without obligation, please send me complete information and prices on the 44ST. Depth of wells _____

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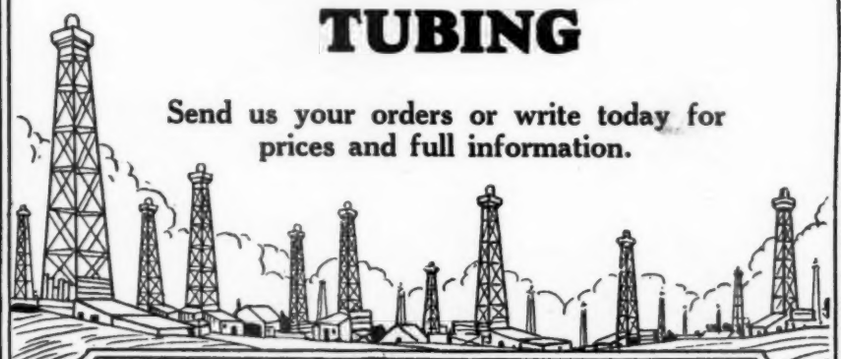

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T 4n, R 4e, Pontotoc County—Sec 10, Marland Oil Co.'s Lawrence 1, c sw se, dr 1650 ft.

T 4n, R 6e, Pontotoc County—Sec 13, American O&R Co.'s Wright 1, nw c ne ne, sd 1970 ft. Sec 35, Bowles et al's Rayborn 1, sw c se, sd 1320 ft.

T 4n, R 7e, Pontotoc County—Sec 8, J. C. Crosby & Hicks' Nowbaby 1, se c ne sw, sand showing oil and water 1044-1054 ft, sd to test.

T 3n, R 1e, Garvin County—Sec 12, Magnolia's Vaughn 1, nw c sw nw, dr 4772 ft.

T 1n, R 2e, Murray County—Sec 17, Revels & McGee's M. Wolfe 1, sw c, co 335 ft.

T 1n, R 8e, Coal County—Sec 35, W. E. McGraw et al's Patton 1, sw c se ne, sd 935 ft.

T 5s, R 4e, Marshall County—Sec 11, Bilbo's Chapman 1, ne c nw ne, sd 380 ft.

KANSAS

BARBER COUNTY—T 30s, R 14w, Sec 27, Rowland et al's Picken's 1, owd, ne c nw ne, sd 3196 ft. T 31s, R 12w, Sec 17, Merriman et al's Winter 1, c n½ fsh 3445 ft. T 33s, R 12w, Sec 19, Schaffer et al's Boggs 1, c sw, sd 5035 ft. T 33s, R 13w, Sec 2, Schaffer et al's Carter 1, c se se, fsh 3980 ft.

BARTON COUNTY—Tp 20s, R 13w, Sec 12, Everette & Wiley's Ward 1, nw c sw, sd 3940 ft.

BUTLER COUNTY—T 25s, R 4e, Sec 18, Wichita Drlg. Co.'s Joseph 1, ne c se nw, sd 2425 ft. T 27s, R 3e, Sec 24, La Rob Oil Co.'s Baysinger 1, ne c sw, rig. T 27s, R 5e, Sec 26, Cress, Frank et al's Bryson 1, ne c, dr 845 ft. T 28s, R 8e, Sec 21, Burford & Brimm's Ferris 1, se c ne sw, lcn. T 29s, R 4e, Sec 21, E. Wilcox et al's Holcomb 1, ne c se nw, sd 1456 ft.

CHASE COUNTY — T 21s, R 7e, Sec 9, Greener, Fowler et al's Carson 1, ne c, fsh 2015 ft.

CHAUTAUQUA COUNTY—T 32s, R 8e, Sec 15, Roth & Faurot's Hamil 1, nw c sw nw, lcn. T 32s, R 9e, Sec 33, Manhattan Oil Co.'s Payne 1, se c nw nw, fsh 800 ft.

CLARK COUNTY—T 31s, R 23w, Sec 16, Walker & Walner's Mitchell 1, sw c ne, sd 450 ft.

CLOUD COUNTY—T 6s, R 4w, Sec 6, Concordia Oil Co.'s Murdock 1, se c, sd 3590 ft.

COFFEY COUNTY—T 22s, R 15e, Sec 11, Clarke et al's Douglas 1, nw c se ne, sd 1115 ft.

COWLEY COUNTY—T 30s, R 3e, sec 3, Vickers Pet. Co's. Daniels 1, nwc ne, sd 1650 ft. T 30s, R 6e, sec 20, Allison & Fitzwilliams' Manley 1, nec nw se, dr 250 ft. T 31s, R 4e, sec 14, Trees Oil Co.'s King 1, sw c se ne, dr 1638 ft. T 31s, R 5e, sec 4, Tatlock et al's Elliott 1, owd, nwc se, sd 3422 ft. T 32s, R 6e, sec 12, Trees Oil Co.'s Estus 1, sec nw, dr 1500 ft. T 33s, R 4e, sec 4, White Oil Co.'s White 1, swc ne, rig. T 34s, R 3e, sec 10, Shawver et al's Amena 1, nwc, dr 1045 ft.

DICKINSON COUNTY—T 16s, R 4e, sec 2, Skow & Ritchey's Will 1, c nw nw, lcn; sec 35, Harwood & Winters' Utek 1, swc se nw, d and a 2601 ft, show 2275-2370 ft.

ELLIS COUNTY—T 13s, R 16w, sec 26, Tatlock et al's Leiker 1, nwc ne ne, dr 3286 ft.

FRANKLIN COUNTY—T 16s, R 18e, sec 17, Smith, Thrice & Fisher's Owens 1, cel e½ e½, sd 1450 ft. T 17s, R 17e, sec 25, Omar O. & G. Co.'s Bush 1, sec sw, lcn.

GREENWOOD COUNTY—T 24s, R 13e, sec 4, Carnes & Bly's Smith 1, nec se, sd 1250 ft. T 26s, R 9e, sec 6, Kiskadden et al's Wilkerson 1, nec se sw, lcn. T 26s, R 11e, sec 22, Devine et al's Bradford 1, swc ne, sd 600 ft. T 26s, R 12e, sec 20, Smith & Rockhill's McNair 1, nwc se, sd 1600 ft. T 28s, R 12e, sec 1, Swanson et al's Hayes 1, sec nw ne, sd 1600 ft.

GRAHAM COUNTY—T 8s, R 25w, sec 27, Gulf Coast Drlg. Co.'s St. John 1, owd, swc nw se, sd 3435 ft.

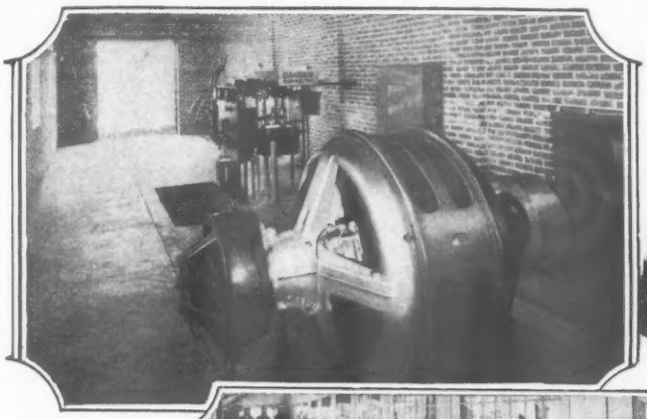
HARPER COUNTY—T 34s, R 6w, sec 24, Amerada Pet. Corp.'s Mendenville 1, c se se, fsh 4625 ft.

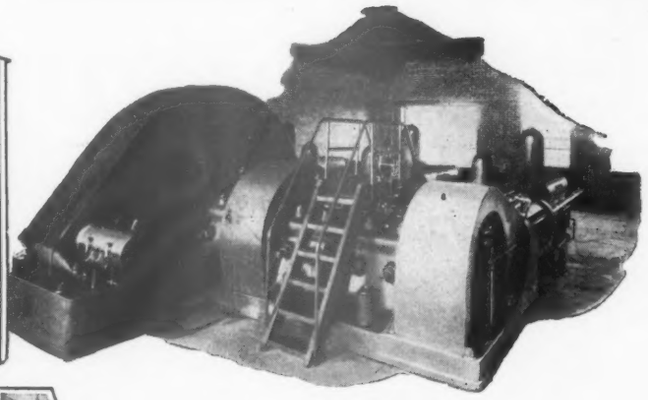
JEFFERSON COUNTY—T 9s, R 19e, sec 13, Northern Counties Oil Co.'s Edwards 1, sec nw nw, sd 2405 ft. T 10s, R 17e, sec 19, Wichita Oil Co.'s Simpson 1, nwc sw sw, rig.

LABETTE COUNTY—T 33s, R 17e, sec 1, Cowell et al's Hornbeck 1, swc ne sw, sd 1375 feet.

LYON COUNTY—T 21s, R 10e, sec 14, Hawks et al's Schroeder 1, sec sw, fsh 1720 ft.

MARSHALL COUNTY—T 4s, R 7e, sec 4,





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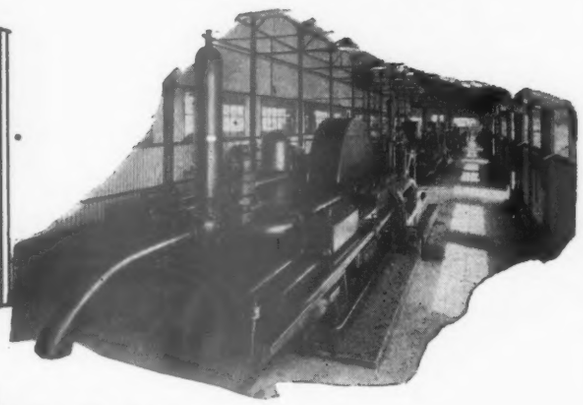
Four G-E 200-hp. induction motors driving pumps at the Empire Pipe Line Company, Lima, Okla. This equipment handles 32,000 barrels per day.



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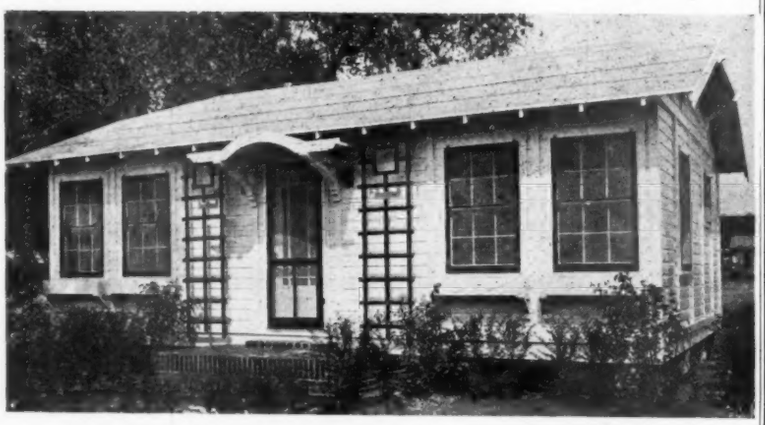

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Marshall Oil Synd.'s Finn 1, nwc ne ne, sd 2606 ft.

McPHERSON COUNTY—T 20s, R 3w, sec 20, Polar Oil Co.'s Dary 1, c nw, spd and sd.

MARION COUNTY—T 18s, R 4e, sec 20, Skow et al's Melcher 1, c ne se, good show 2400-01 ft. T 18s, R 5e, sec 31, Anderson et al's Benthe 1, sec sw sw, dr 2005 ft. T 19s, R 4e, sec 17, Frank et al's Reed 1, nwc, sd 2406 ft. T 21s, R 1e, sec 1, Sun Ray Oil Co. et al's Lehrman E1, swc ne se, sd 2710 ft.

MEAD COUNTY—T 33s, R 28w, sec 9, Blackwell O. & G. Co.'s Lilly 1, c se, sd 3310 feet.

MORRIS COUNTY—T 14s, R 7e, sec 32, Klein et al's Barber 1, sec nw, rig. T 16s, R 9e, sec 22, Lambert et al's Southard 1, swc se, lcn. T 17s, R 5e, sec 30, Graham et al's Nelson 1, nec se, dr 1410 ft.

NEMEHA COUNTY—T 3s, R 11e, sec 19, Nemeha O. & G. Co.'s Myers 1, nwc, sd 3050 feet.

OSBORNE COUNTY—T 9s, R 15w, sec 20, Davis et al's Prather 1, sec sw, sd 2360 ft.

OSAGE COUNTY—T 15s, R 15e, sec 3, Barber et al's Lease 1, c se se, sd 260 ft. T 15s, R 16e, sec 27, West et al's Baley 1, swc ne, sd 800 ft. T 17s, R 17e, sec 8, Mull Vit Dev. Co.'s Neil 1, nwc sw ne, dr 2931 ft.

POTTAWATOMIE COUNTY—T 10s, R 12e, sec 11, Crawford et al's St. Mary 1, swc, sd 2290 ft.

RENO COUNTY—T 22s, R 4w, sec 6, Danciger et al's Williams 1, nec sw se, rig.

RILEY COUNTY—T 10s, R 7e, sec 20, Youker et al's Theirer 1, nwc, sd 3028 ft.

ROOKS COUNTY—T 8s, R 16w, sec 14, Krueger et al's Poor 1, nec, spd and sd. T 10s, R 16w, sec 28, Streeter & Stearns' Mattison 1, c nw, sd 3531 ft.

RUSH COUNTY—T 17s, R 17w, sec 27, Valerious O. & G. Co.'s Schreveman 1, c nw, spd and sd.

SHAWNEE COUNTY—T 12s, R 14e, sec 21, McBride & Goens' Shirley 1, nec sw, d and a 2469 ft.

STAFFORD COUNTY—T 21s, R 11w, sec 23, Harper et al's Siffers 1, owd, nwc sw ne, ts 3385-3400 ft, show oil, dr 3573 ft.

SHERMAN COUNTY—T 7s, R 40w, sec 20, Hannson et al's Murry 1, owd, nec sw nw, sd 2800 ft.

SUMNER COUNTY—T 33s, R 3w, sec 22, Otstot et al's Bartlow 1, sec, sd 1860 ft. T 34s, R 2w, sec 23, Gypsy Oil Co.'s Douglas 1, nec se nw, ts 4493-99 ft, 16 bbl per hr. T 34s, R 3w, sec 4, Jarvis et al's Wernecke 1, sec sw, sd 4205 ft. T 34s, R 4w, sec 11, Jarvis et al's Wycoff 1, swc nw, sd 4216 ft. T 35s, R 1e, sec 9, Otstot et al's Volker 1, nwc ne, rig.

NORTHERN CALIFORNIA

KERN COUNTY

ADOBE CANYON—Berry Oil Co.'s 1, 25-27-28, rig.

BAKERSFIELD—Jackson & Chamberlain's 1, 19-29-28, rig. Pacific Eastern Production's KCL 1, 6-30-28, fsh for underreamer, td 5640 ft; KCL 2, 6-30-28, dr hard sand 3960 ft.

BELRIDGE—Zurich Oil Co.'s 1, 18-28-22, oil showings 2625 ft.

BUTTONWILLOW—McAdams et al's 1, 26-29-23, 8⅝-in csg cemt 4685 ft. Milham Exploration Co.'s 3, 8-28-23, dr 2700 ft. Southern Calif. Gas Co.'s 1, 4-28-23, plugged to 2720 ft.

COMANCHE POINT—Kern 29 Oil Co.'s 1, 29-31-30, sd 2440 ft. W. W. Stabler's 1, 23-32-29, dr 1500 ft.

DELANO — North American Consolidated's Wallace 1A, oil showings 4105 ft, td 4165 ft.

DEVILS DEN—Marathon Oil Co.'s 1, 13-25-28, sd 4390 ft. Midway Northern Oil Co.'s 1, 25-25-18, sd 1475 ft.

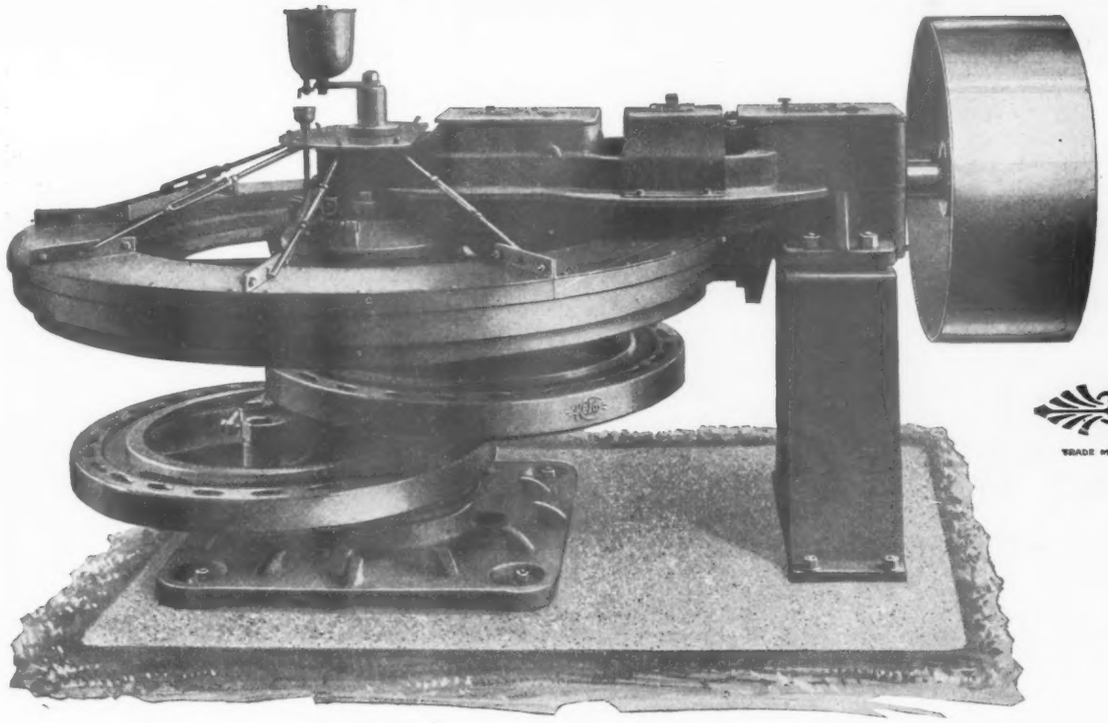
EDISON—General Petroleum's Kerwin 1A, plugged to 3965 ft, will test. Midway Northern Oil Co.'s 1, 29-29-30, dr hard shell 3170 ft. Superior Oil Co.'s 1, 24-29-29, dr hard sand 1513 ft.

FRUITVALE—Pacific Eastern Prod. Co.'s 1, 21-29-27, pumping 190 bbl.

GREENFIELD—J. E. O'Donnell's 1, 31-30-28, new lcn.

GOULD HILLS—Bomke & Ball's 1, 12-29-20, dr 1467 ft. California-Kentucky's 1, 8-29-21, dr oil sand 1650 ft. Exeter Oil Co.'s 1, 1-29-20, dr 814 ft. Jackson & Chamberlain's 1, 36-29-20, sd 580 ft. Herbert Moore's Spaulding 1, 11-29-20, dr 788 ft; Spaulding 2, 11-29-20, rig.

McKITTRICK—McKittrick Hills Oil Co.'s 2,



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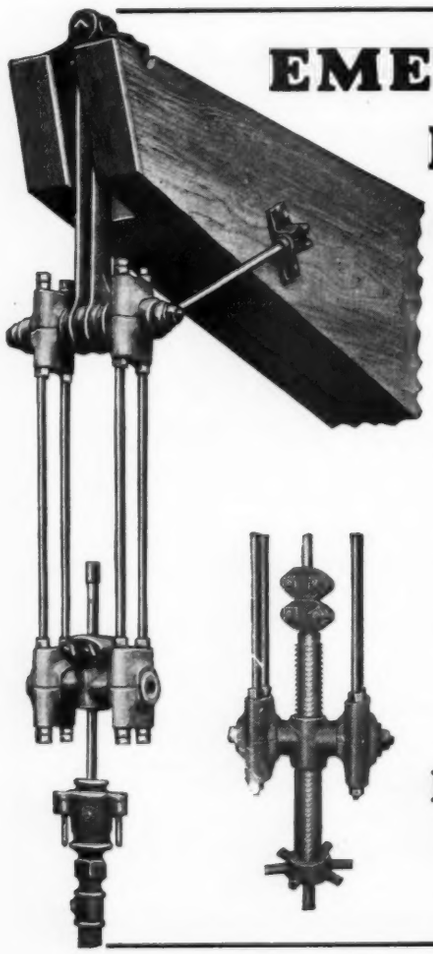

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SEMITROPIC—Richfield Oil Co.'s 1, 21-26-22, will dr deeper from 1520 ft.

SHALE HILLS—Huntington & Hawthorne's 1, 35-26-18, sd 600 ft. Nelson & Mountford's 1, 18-27-19, sd 2100 ft. Oildale Oil Co.'s 1, 13-27-18, sd 560 ft.

SUNSET—Fresno-Sunmaid's 1, 16-11-24, sd 4200 ft.

TEMBLOR HILLS — Jackson & Chamberlain's 1, 36-29-20, sd 580 ft. Salegna Investment Co.'s 1, 36-29-20, sd 600 ft.

TEHACHAPI-MOJAVE—C. R. Asmussen's 1, 21-11-11, sd 1510 ft. Crusaders Oil Co.'s 1, 21-10-10, trying to locate water 2370 ft. J. B. Harding's 1, 5'-10-10, sd 1050 ft.

WASCO—Main Oil Co.'s 2, 28-27-24, co 5270 ft.

SANTA BARBARA COUNTY

GOLETA—Barnsdall's Edwards 2, producing 25 bbl oil and some gas. J. J. Rekar's La Patera 1, 8-4-29- sd 2180 ft.

SANTA BARBARA—Channell Oil & Dev. Co.'s 1, 29-4-27, swabbing 6025 ft. Pet. Explo. Co.'s 1, 20-4-27, dr 2400 ft.

SUMMERLAND—Summerland Oil Co.'s Becker 1, 22-4-26- co 3045 ft.

VENTURA COUNTY

BARDSALL—Calif. Western Oil Co.'s Elkins 1, rigging rotary.

FILLMORE—Keck Investment Co.'s Sespe 1, 33-4-20, dr 4200 ft. Sespe Oil Co.'s Smith 2, 33-4-20, sd 4005 ft. Henry Demoud's 1, 19-4-19, lcn.

HOPPER CANYON—Ruth J. Bishop's 1, 35-5-19, sd 200 ft.

MOORPARK—F. A. Parkford's Lloyd 1, sd 4000 ft.

OJAI—J. W. Hackworth's 1, 11-4-23, dr 1376 feet.

OXNARD—Shell's McGrath 1, dr 1730 ft.

PIRU—Bolsa Chica's Sidden 1, 5-4-18, rig. Leonard Oil Co.'s 1, 4-4-18, will test at 3945 ft. Petroleum Securities' 1, 26-5-10, sd 4200 ft. Pet. Producers' Fleisher 1, 17-4-18, sd 610 ft.

RINCON—Montecito Oil Producers' Cota 1, 13-4-25, dr hard sand 3620 ft. Scott Petroleum Co.'s 1, 35-4-25, dr 3203 ft.

RED MOUNTAIN—Miley Exploration's Casitas 2A, co 750 ft.

SANTA PAULA—W. W. Bryant's Anlauf 1, 21-4-21, dr 418 ft.

SATICOY—Standard's Eaton 1, 15-3-22, 150 feet.

SIMI—Emma F. Exline's Seaton 1, 33-3-21, lcn. Shell's Berylwood 1, 32-3-20, plugging back from 6420 ft; Strathern 1, 6-2-18, dr 3610 ft.

TAPO CANYON—Continental's Newhall 4, pumping 18 bbl 2150 ft.

VENTURA—Star Petroleum's Canet 1A, dr 5449 ft.

SOUTHERN CALIFORNIA

CLAREMONT—Claremont O. & G. Co.'s 1, sd 1130 ft.

COSTA MESA—Mesa Pet. Corp.'s 1, dr sandy shale 2222 ft.

CYPRESS—Ohio Oil Co.'s 1, dr 835 ft.

DAVIDSON—Calif. Well Drilling Co.'s Del Amo 1, coring 7215 ft.

DOMINGUEZ—Dominguez Extension Oil Co.'s 1, 4¼-in csg cemt 5460 ft, td 5510 ft.

EL SEGUNDO—Southern California Drilling Co.'s Matterson 1, sd 4865 ft.

FULLERTON—Shell's Stern 1, dr 3840 ft.

HAWTHORNE—San Clemente Oil Co.'s Peck 1, sd 5765 ft. Scott & Currier's 1, rig. Shell's O'Donnell 1, coring 5350 ft.

HUNTINGTON BEACH—Calnan Petroleum Corp.'s S. & W. 1, co 4440 ft, td 5107 ft. Duell Petroleum Corp.'s Schuh 1, rig.

INGLEWOOD—Hurst Oil Corp.'s Simons 1, sd 3740 ft.

LANCASTER—Otis Andrews' 1, dr 1440 ft. John B. Harding's 1, sd 975 ft. D. H. Woods' 1, 5-7-10, new lcn.

LYNWOOD — Security Pet. Corp.'s 1, dr brown shale 3975 ft.

MAYWOOD—Magnolia Pet. Synd.'s Tweedy 1, sd 4450 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s Browning 1, sd 3940 ft.

NEWHALL—W. W. Stabler's Castaic 1, sd 3410 ft.

ORANGE—Chas. A. Son's Pinkerton 1, sd 3620 ft.

POTRERO—Associated's Cypress 1, bailing

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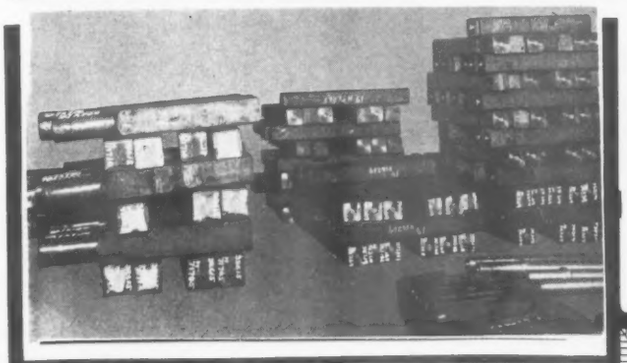

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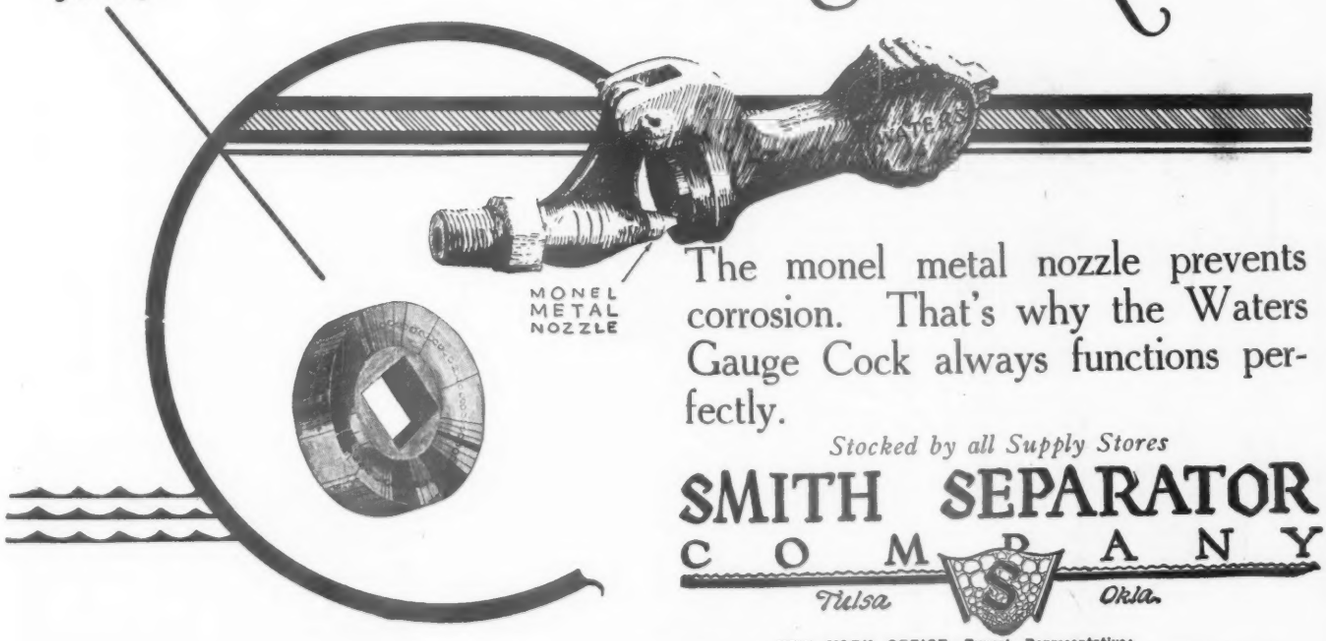
60 SEATS

The Waters Gauge Cock



The monel metal nozzle prevents corrosion. That's why the Waters Gauge Cock always functions perfectly.

Stocked by all Supply Stores

SMITH SEPARATOR COMPANY

Tulsa Okla.

NEW YORK OFFICE—Export Representative:
Oil Field Equipment Co., 30 Church St., New York. Cable Address: "Oilfield" N. Y.
CALIFORNIA OFFICE:
2039 East 38th Street, Los Angeles, California
LONDON OFFICE:
Perkins Macintosh Petroleum Tool & Boring Co., Ltd., 25 Bishopsgate
Cable Address: "Oleborers" London
TEXAS OFFICES:
924 Post-Dispatch Bldg., Houston, Texas. 1402 Ft. Worth Nat. Bank Bldg., Ft. Worth, Texas
LOUISIANA OFFICE: 737 Rutherford Street

1000 feet—11" hole
40 hours—cost
3c per foot

K-P

THE LINE OF LEAST RESISTANCE

STRAIGHT HOLE
Rotary Drilling Bit

—made this speed and low cost record. A 1000 feet of 11" hole in 40 hours, passing another well by 100 feet that was started 5 days previously, is the record made by the Klingensmith Drilling Company at Pearson Switch, Okla., with three sets of K-P self-sharpening cutters in a K-P *Straight Hole Bit. This thousand feet cost Klingensmith only* $30.00 *for K-P self-sharpening cutters.* The total footage was made in three round trips.

KENNEDYE-PLUMB CORP.
Railway Exchange Bldg. St. Louis, Mo.

Sold by every
"Continental" — "National" — "Oil Well" Supply Company Branch Store.

mud oil and water 5407 ft; Cypress 2, dr 3075 ft. Carpenter & Smith's 1, sd 5300 ft, flowed 1,000,000 cu ft gas for several days. Petroleum Securities' Connolly 1, dr hard shale 4350 ft.

PUENTE HILLS—Anchor Pet. Co.'s Hudson 1, sd 2270 ft.

RIVERA—Associated's Patterson 1, dr hard black shale 5315 ft.

SAN FERNANDO—Shell's Mission 1, abn 4955 ft.

SAN JOSE HILLS—Bardeen Oil Co.'s Didier 3, sd 2255 ft. D. & B. Oil Co.'s Amar 1, sd 4380 ft.

SEAL BEACH—George F. Getty's 15, dr hard sand 2112 ft.

MISCELLANEOUS

FRESNO COUNTY — Fresno - Madera Oil Co.'s 1, 18-21-21, fsh 4015 ft. Fresno-United Oil Co.'s 1, 23-15-18, sd 3960 ft. Superior Oil Co.'s 1, 18-21-17, rig.

KINGS COUNTY—Associated Oil Co.'s 1, 12-23-18, sd 2045 ft. Bolsa Chica Oil Co.'s 1, 30-23-19, plugging back to 2275 ft. General Petroleum's 2, dr hard sand 6770 ft. Milham Exploration's 1, 2-22-17, dr hard shale 6760 ft. Monocline Development Co.'s 1, 7-21-21, sd 4310 ft. Hugh McPhail's 1, 13-24-18, bailing 2100 ft. South Coalinga Oil Co.'s 1, 35-24-19, redr 35-24-19.

ALAMEDA COUNTY—Calhoma Oil Co.'s 1, sd 1220 ft. Thomas & Hammill's 1, 16-3-3, co 1025 ft.

CONTRA COSTA COUNTY—W. Edward's 1, 31-2-2, sd 2225 ft.

COLOUSA COUNTY—Calvida-Superior Oil Co., 31-15-4, pumping 3 bbl. Colus Oil Co.'s 1, 31-15-4, dr 224 ft. Continental's 2, 31-8-4, fsh for dr pipe 4300 ft. Numa Oil Co.'s 1, 19-15-4, dr hard shale 320 ft.

HUMBOLDT COUNTY—Eureka Oil Co.'s 1, 24-4-1, sd 3070 ft. First National Petroleum Co.'s 1, 36-2-1, lcn. Humboldt Oil Co.'s 1, 6-2-1, sr 2880 ft. Northern Counties Oil Co.'s 1, 36-2-1, oil showing 1950 ft.

MADERA COUNTY—Fort Wayne Synd.'s 1, 22-10-17, fsh for dr pipe 2250 ft.

MERCEDES COUNTY—J. E. Faber's 1, 19-6-11, dr shale 826 ft. H. L. Kuhns' 1, 31-9-9, dr hard sand 1300 ft.

MONTEREY COUNTY—Marland's 1, 32-24-11, rigging rotary. Oil Products Co.'s 1, 26-11-9, sd 3185 ft.

SAN LUIS OBISPO COUNTY—Arroyo Grande Oil Co.'s 1, 21-32-13, sd 4385 ft. Barneyberg Oil Co.'s 2, 25-32-14, co 2270 ft. Panorama Oil Co.'s 1, 7-31-21, dr 2036 ft. Paso Robles Oil Co.'s 1, 34-27-13, dr 1693 ft. Richfield's Miley 1, 15-29-17, sd 2540 ft. San Luis Synd.'s 1, 29-31-13, fsh 2220 ft. Union's 1, 34-32-15, dr 908 ft.

SAN MATEO COUNTY—Sequoia Oil Co.'s 1, 13-7-5, running liner 1400 ft. Shell's Butts 1, 21-6-5, dr 1810 ft; Cowell 1, dr 5884 ft.

SONOMA COUNTY—Shell's Mossi 1, 8-5-7, 10-in cemt 310 ft, td 1440 ft.

TULARE COUNTY—Ducor Drilling Co.'s 1, 29-23-27, pulling 4½-in csg 4160 ft.

SUNSET BEACH—Olympic Ref. Co.'s 1, dr 4500 ft.

SAN JUAN CAPISTRANO—O. K. Carr's Forster 2, sd 4185 ft.

TELEGRAPH CANYON—Quadra Pet. Co.'s MJM 1, sd 4210 ft.

YORBA—Standard Oil Co.'s 1, dr 5325 ft.

WATTS—Southwest Pet. Co.'s Ramsaur 1, sd 4300 ft.

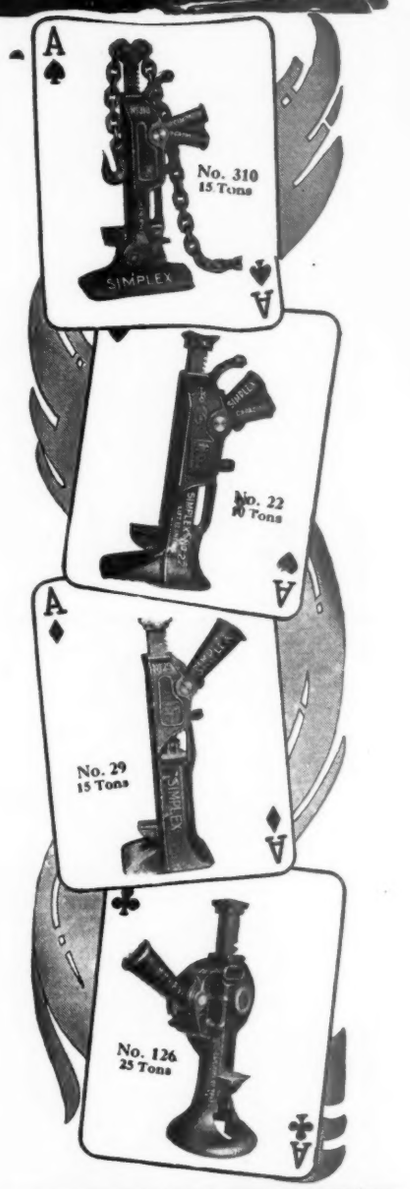
WATSON—White Behr Consolidated Oil Co.'s 1, 10-in csg cemt 4415 ft, td 4610 ft.

RIVERSIDE COUNTY—L. R. Clark's Cabazon 1, dr hard sand 954 ft. Hemet Petroleum's Ward 1, dr limestone 2280 ft. Spindletop Oil Synd.'s Salton 1, sd 3175 ft. Trabuco Oil Co.'s 1, dr hard sand 3360 ft.

SAN BERNARDINO COUNTY—Colton Terrace Oil Co.'s Colton 1, co 1675 ft. Como Oil Co.'s Cajon 1, sd 2845 ft. Del Rosa Oil Co.'s 2, sd 915 ft. Hesperia Oil & Gas Co.'s 1A, sd 2400 ft. J. W. MacPhearson's Yucaipa 1, dr hard sand 384 ft. Western Pacific Oil Co.'s 3, sd 3005 ft.

SAN DIEGO COUNTY—Davenport O. & G. Co.'s 1, dr hard sand 322 ft. Ganymede & Dunn's 1, fsh for dr pipe 3210 ft. Mills Oil Co.'s Pueblo 1, dr 2100 ft. S. S. Turner's Baler 1, dr hard sand and shell 350 ft.

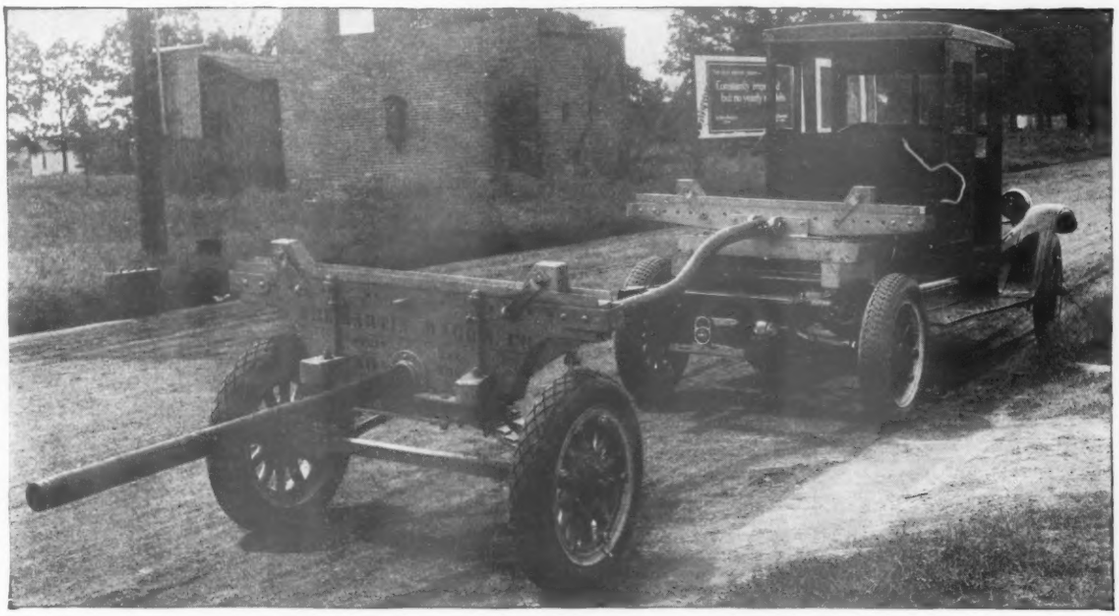
"4 Jacks" that are "Aces" in every oil field



Templeton, Kenly & Co., Ltd.
Sole Mfrs.
Chicago, Illinois

Simplex Jacks
At Your Supply House

When Speed Is Needed in the Oil Fields—



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Designed without Standing Valve

YOU make the most money when you keep your daily production record at a constant level. The elimination of tubing jobs will remove your greatest cause for uneven production.

Since the GRAY OIL PUMP has no standing valve, the frequent pulling of tubing to correct standing valve troubles is done away with.

No more oily, slippery floors.

No more oil-soaked fire hazards.

Your men have more time for other work. You win their good will and cooperation.

In every way you MAKE MORE MONEY.

WRITE TODAY for complete information.

"GRAY for Fine Tools"

GRAY TOOL COMPANY

HOUSTON, TEXAS.

TEXAS
GULF COAST
Completions

Company, Well and Location	Initial Production Bbls.	Depth
LIBERTY COUNTY—		
Sun Oil Co., Mitchell 1, S. Liberty	700	3275
FORT BEND COUNTY—		
Gulf, Wolf 7, Long Point	*	1075
AUSTIN COUNTY—		
Alexander & Lyles, Goebel 1, Raccoon Bend	*	2750

AUSTIN COUNTY—Humble's Grawunder A-1, Raccoon Bend, dr 480 ft, sand and shale; Wilson 1, Raccoon Bend, dr 2670 ft, shale. Alexander & Lyles' Goebel 1, Raccoon Bend, abandoned at 2750 ft. L. H. Weadock's Ward 1, td 1145 ft.

BRAZORIA COUNTY — Roxana's Allen Bernard 1, Allen Dome, pumping 34 bbls. Allen 4, Allen Dome, running tubing. Randon 1, Allen Dome, sdtrk 4718 ft. Bell 2, Clemens Dome, prep to abandon, depth 5960 ft. Gulf's Perry 3, Stratton Ridge, coring 5200 ft. Stanfield & Myers' McNeil 1, Hinckle Ferry, dr 1250 ft, lime. Rucks et al's Muldoon 2, Slop Bowl, bailing.

CHAMBERS COUNTY—Pure's Lost River 1, Lost Lake Dome, dr 3575 ft. Old River 1, Lost Lake Dome, dk; Trinity River 1, Lost Lake Dome, dk; Little Lost Lake 1, Lost Lake Dome, dk; Lost River Lake 1, Lost Lake Dome, dk; Cut-Off Bayou 1, Lost Lake Dome, lcn. R. L. Bartlett's Fisher 1, Barbers Hill, dr 2160 ft.

COLORADO COUNTY—Rich Oil Corp.'s Von Rosenberg 1, 2¼ mi ne of Columbus, standing 1066 ft. Johnson Bros.' Breeding 1, ne of Sheridan, sd 2145 ft.

FORT BEND COUNTY—Sun Oil Co.'s Kasparek 2, Boling, dr 1440 ft, gbo; J. R. Farmer 5, Boling, dr 3425 ft, sand; J. R. Farmer 6, Boling, dr 960 ft; J. R. Farmer 7, Boling, dr 820 ft; H. R. Famrer 5, Boling, temporarily abandoned. H. R. Farmer 6, Boling, dr 650 ft, lime; H. R. Farmer 7, Boling, dr 1290 ft; E. C. Farmer 1, Boling, standing. Gulf's Wolf 7, Long Point, abandoned, Wolf 8, dr 900 ft, gbo. Trone 7, Long Point, ru. J. M. Moore 15, Moore's Field, dr 2850 ft. Humble's Sugarland Industries 1, Sugarland, dr 3205 ft, shale and lime.

HARRIS COUNTY—Dr. P. S. Griffith's Fee 1, 8 mi nw Houston, sd 480 ft. Juanita Oil Co.'s Kitsman 1, 3 mi n of Cypress, td 1311 ft. Hunt et al's Lobit 1, 4 mi n Goose Creek, dr 1350 ft. Humble-Marland's Warren 2, Hockley, dr 4360 ft, shale. Tex-Ex-Warren 2, Hockley, lcn.

JEFFERSON COUNTY — Deep Test Oil Co.'s McFaddin 1, 4 mi ne of Spindle Top, sd 2165 ft. Gulf's Bordages 4, Fannette, dr 5015 ft. Southern Spindle Top O. & Dev. Co.'s Young 1, 1 mi w Nederland, sd 3350 ft. Jim McMurry's Crosby 2, 5 mi ne Port Arthur, dr 3120 ft, gbo. Port Arthur O. & Dev. Co.'s West 4, Westbury, dr 3612 ft, sand. Hinds Oil Co.'s Parker 3, ne side of Spindle Top, dr 2750 ft. Traders Oil Co.'s Cissell 1, dr 3550 ft, lime. The Texas Co.'s Gladys City 1, Spindle Top, dr 1770 ft, gbo.

LIBERTY COUNTY — Harrison Oil Co.'s Quintette 2, N. Dayton, temp abn. The Texas Co.'s Green 1, S. Liberty, flowing 2100 bbls. through a 5/64-in choke; Staiti 8. S. Liberty, dr 2770 ft, gbo. Yount-Lee Oil Co.'s Mitchell 2, will be put to pumping. Sun Oil Co.'s Mitchell 1, flowing 700 bbls through tubing from 3275 ft. Barlow et al's Minchcliff 1, 2½ mi ne Cleveland, sd 2215 ft.

MATAGORDA COUNTY—Gulf's Sanborn 5, Hawkinsville, dr 1060 ft. Matagorda County Dev. Co.'s Hawkins 1, Bay City, sd 1985 ft.

WHARTON COUNTY — Rich Oil Corp.'s Lee-Clipson 1, ½ mi sw of Lissie, dr below 1546 ft.

SOUTHWEST TEXAS

JIM HOGG COUNTY—		
Magnolia, Merchants State Bank 55	60	1242
WEBB COUNTY—		
Cole Pet. Co., No. 52, Cole field	130	2333
J. H. Winch, Gates 1, sec 70	*	2375
W. O. Wheatley, Gates 1	*	....

CALDWELL COUNTY—Dr. Bute's Boyd 1, sd 2375 ft. Radcliff et al's Briscoe 1, ne Luling, standing. Hertz & Hinton's Parr 1, td 1415 ft. Joe Bruner et al's Wilson 1, td 40 ft.

DUVAL COUNTY—R. Driscoll's Fee 9, sec

Why not the "Comfortable Great Northern" on your next visit to Chicago

Arriving in Chicago, you are within convenient distance of this famous hotel, which is in the central business section, less than one block from State Street, the great shopping thoroughfare, and close to the theatre, financial and wholesale districts. The Field Museum Art Institute and Soldier Field Stadium are within easy walking distance.

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GREAT NORTHERN HOTEL

Chicago

Dearborn Street
From Jackson to Quincy

23, testing at 2983 ft. National Oil Co.'s Ball 1, dr 1080 ft.

HIDALGO COUNTY — Dale Smith's Daskan 1, td 3235 ft.

JIM HOGG COUNTY — Miller Shaw's Jones 1, sec 381, dr 1865 ft. St. Alban's Lopez 9, td 2145 ft.

SAN PATRICIO COUNTY — Pardee Pet. Co.'s Bell 1, 4 mi s Mathis, sd 2850 ft. Leach et al's Collins 2, nw Mathis, td 2375 ft.

VAL VERDE COUNTY — East Del Rio's Weatherbee 1, sd 3200 ft. Thraves et al's Wilson 1, dr 910 ft.

WEBB COUNTY—J. H. Winch's Gates 1, sec 70, abandoned 2375 ft.

SOUTH LOUISIANA

Completions

LA FOURCHE PARISH—
Gulf, Stark et al 2, Thibodaux .... * 1375

ASCENSION PARISH — Gulf's United Lands Co. 5, Sorrento Dome, dr 1700 ft.

CALCASIEU PARISH — Union Sulphur Co.'s Fee 722, Sulphur Dome, dr 3320 ft; Fee 723, Sulphur dome, ru; Fee 724, Sulphur dome, dr 1675 ft, rock. Newton Drilling Co.'s Dupre 1, Lake Charles, dr 3800 ft sand.

CAMERON PARISH—Pure's Sweet Lake 2, Sweet Lake, resumed work; Sweet Lake 3, Sweet Lake, cleaning out. Sweet Lake 4, Sweet Lake, flowing; Sweet Lake 5, Sweet Lake, flowing. La. Land & Explo. Co.'s Calcasieu Lake B-1, ½ mi ne of Kelso Bayou field, moving in material. Calcasieu Oil Co.'s Watkins 2, Kelso Bayou, dr 3800 ft, salt. Watkins 3, Kelso Bayou, location abandoned; Caldwell 3, dk; Doiron 1, Kelso Bayou, dr 4060 t. Roxana Pet. Corp., Watkins estate 1, Noble et al's Ellender 1, Hackberry, reaming. Yount-Lee Oil Co.'s School Land 7, Hackberry, dr 5145 t; State Land 6, Kelso Bayou, dr 3800 ft; State Land 7, Hackberry, dr 3320 ft; State Land 8, Hackberry, lcn.

IBERIA PARISH—La. Land & Explo. Co.'s Vermillion Bay A-1, 3½ mi sw of Cypremont Point, dk; Avery 1, Avery Island, dr 4650 ft, shale. Gulf's Loreauville, dk. Jefferson O. & Dev. Co.'s Jeff Island Salt Co. 2, dr 4205, gbo.

IBERVILLE PARISH—Roxana's Wilbert 1, White Castle Dome, coring sandy shale and cap rock at 2055 ft. Union Sulphur Co.'s Wilbert 1, Bayou de Glaise Dome, temp abnd.

JEFF DAVIS PARISH—Estropal Oil Co.'s Le Doux 2, sd rock 2980 ft. Eunice Welsh Oil Co.'s Walsh 2, dr 400 ft.

LA FOURCHE PARISH—Gulf's Mrs. Stark et al's 2, Thibodaux, abnd at 1375 ft.

ST. MARY PARISH—Jacob Dannenbaum's Viguerie 1, Grand Lake, lcn.

TERREBONNE PARISH — Southern Gas Co.'s South Down 4, td 1390 ft.

WEST TEXAS

RUNNELS COUNTY—
Vacuum Oil Co. et al, McMillan 2.. 140 2516

ANDREWS—Deep Rock Oil Co.'s Harris 1, elev 3173 ft, top salt 1705 ft, sd 2970 ft.

BORDEN COUNTY—Dixon Creek Oil Co.'s Clayton-Johnson 1, dr by tools 540 ft. Marland Oil Co.'s McDavid 1, top lime 2410 ft, fsh stem 2810 ft; Murphy 1, lcn.

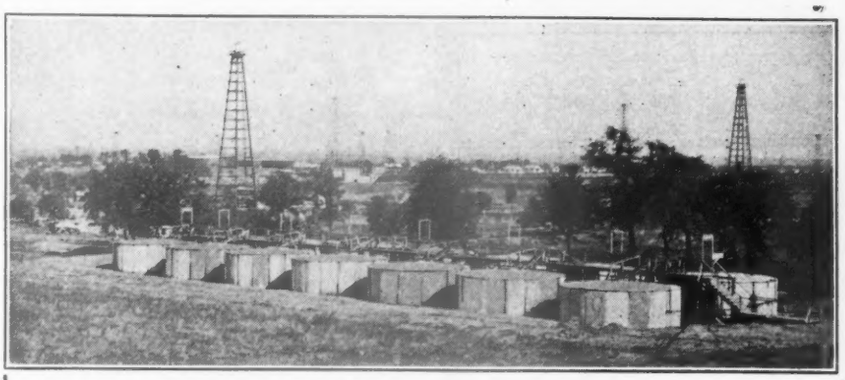
BREWSTER COUNTY—Cole & Cowden's Jackson-Harmon 1, sd 200 ft. Forrest Oil Co.'s Skinner 1, lcn. J. M. Hickey et al's Jackson-Harmon 1, sd 926 ft. Van McPhail et al's McIntyre 1, sd 1705 ft. Mid-Kansas O&G Co.'s Turney 1, dr 3080 ft. Reese & White's Kimball 1, dr 1455 ft. Wilcox & Anderson's Gage 1, dr 1870 ft.

COKE COUNTY—W. H. Brown et al's Foster 1, dr 3420 ft. Lipan Oil Co.'s Conner 1, sd 3375 ft; Rawlings 1, sd 2736 ft.

CONCHO COUNTY—The Exploration Co.'s Hartgrove 1-A, sd 940 ft. Sartain Oil Co.'s Everidge 1, lcn.

CRANE COUNTY—Crane County Dev. Co.'s Mosley-Brookfield 1, elev 2325 ft, top salt 819 ft, top lime 2072 ft, dr 2915 ft. Gulf's Waddell 3, elev 2724 ft, top lime 3055 ft, co after shot, td 3412 ft. Lockhart et al's M. M. Teanor 1, machine.

CROCKETT COUNTY — J. S. Cosden & Co.'s Paul Perner 1, set cas 808 ft. W. W. Donnelly et al's Massie 1-A, sd 300 ft; Shannon 1, sd making gas 1664-80 ft; Shannon 2, rig; Todd 1, materials. Henshaw & McMan O&G Co.'s W. Owens 1, dr 275 ft. Humble O&R Co.'s Sorg 2, elev 2714 ft, top salt 995 ft, ur 2425 ft. Osage Oil Corp. & T. T. Word's



Battery of 14 low-type, 500-barrel Maloneys on Geo. Fish Farm No. 1 of Carter Oil Co.

Last Longer Because They RESIST RUST

Rust is what usually ends the careers of ordinary tanks. MALONEYS last remarkably long because they are made of rust-resisting Keystone Copper Steel. Tests conducted by the Society for Testing Materials have proven copper-bearing steels to be the most durable of all sheet steels.

MALONEY Tanks are perfected in every respect. Our patented "crimp" at seams and joints causes parts to fit with hair-line accuracy. Use of our special rubber packing and our Gaso cement renders seams vapor-tight. Rigid, heavy channels reinforce all seams. Cantilever trusses support decks of larger sizes. Our special Smith Process bolts are 35 per cent stronger than ordinary bolts. Paint used is Maloney special pearl gray paint. Large cleaning-out plates are set flush with bottoms. Valve and deck equipment is the best obtainable.

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MALONEY TANK MFG. CO.
TULSA, OKLAHOMA, U. S. A.

Distributors at All Principal Petroleum Points.

Sizes: 12 to 10,000 Barrels.

Packed in Steel-Bound Crates for Export.

Howell Aluminum "3 in 1" Vacuum Pressure Valve and Thief Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY

"ALONE"

No 1 of a series on the

FLUID PACKED PUMP

FPP

THO the "Fluid Packed Pump" needs no introduction to oil operators, it embodies many salient features that should merit your closest attention and scrutiny.

Each of these points of superiority, together with the service rendered on the pumps, will be thoroughly discussed in this series of ads. Look for them in the 2nd and 4th issues of every month, and know the economy and satisfaction resulting from the use of these pumps.

Fluid Packed Pumps are manufactured only by the Fluid Packed Pump Company of Los Nietos, California, and distributed in Texas, exclusively by the

ROBERT J. MILLER COMPANY

HOUSTON TEXAS

Halff 2, sd for storage 970 ft; Halff 3-A, spd and sd. M. B. Wyrick et al's Halff 1, sd 330 ft.

CULBERSON COUNTY—Deep Rock Oil Co.'s T&P Fee 2, sd 1210 ft; Seay 1, dr 1485 ft. Dittman Drlg. Co.'s Miller 1, sd 1767 ft. J. M. Hickey et al's Finley 1, dr 655 ft.

JEFF DAVIS COUNTY — Humble O&R Co.'s C. Flores 1-A, elev 4329 ft, dr 3980 ft. Sam Means et al's Means 1, sd 2563 ft.

ECTOR COUNTY—O. H. Shoup et al's Davis 2, materials.

EL PASO COUNTY—Ellsworth & Haunt's McKinney-Jones 1, rig.

FISHER COUNTY — Cranfill-Reynolds & Sun Oil Co.'s Young 1, testing 2500 ftt, 35.5 gravity oil in hole from sandy-lime pay 3106-18 ft. R. W. Rainey et al's Marberry 2, sd 2960 ft. Sinclair O&G Co.'s Steele 1, rig.

GARZA COUNTY—Emerald Oil Co.'s J. M. Boren 3, elev 2363 ft, top salt 660 ft, dr 2045 ft. Gulf. Prod. Co.'s Swenson 1-A, elev 2492 ft, top salt 495 ft, top lime 2075 ft, dr lime 4830 ft. Marland Oil Co.'s Pippen 1, rig.

GLASSCOCK COUNTY—Josey & Flinchbaugh's Cox 1, lcn. Marland & Texon's Settles 1, sd hfw 3225-35 ft. R. R. Penn's Hughes-Johnson 1, lcn Merriwether Oil Co.'s McDowell 2, spudding.

TOM GREEN COUNTY—Fitzgerald et al's Bennett 1, sd 1955 ft. R. O. Haubelt et al's Johnson 1, sd 1205 ft. Lone Eagle Oil Co.'s Sharp 1, machine. Marland Oil Co.'s Johnson 1-A, dr 3325 ft. World Oil Co.'s Pulliam 1-B, sd 685 ft.

HOWARD COUNTY—Bristow & Merrick's Hooks 5, rig; Roberts 1, sd 1650 ft. Coyle-Concord Oil Co.'s Roberts 4, co after shot 1873 ft; Roberts 5, dr 1560 ft. F-H-E Oil Co.'s Roberts 3-A, rig; Roberts 4-A, lcn; Roberts 2-B, dr 1840 ft; Roberts 2-D, dr 1250 ft; Roberts 1-C, sd 1960 ft; Roberts 1-E, dr 1255 ft. W. W. Donnelly et al's Clay 1, lcn. Gulf's Chalk 4, elev 2647 ft, testing after shot, td 1780 ft. Godley O&G Co.'s Hooks 2, fsh 1875 ft. Greene O&R Co.'s Clay 1, dr 85 ft. Geo. Henshaw et al's Settles 1, elev 2680 ft, top lime 2085 ft, fsh 2290 ft. Magnolia Pet. Co.'s Mary-Chalk 10, fsh 892 ft; Kelly-Chalk 10, sd 1445 ft; Harry Hyman 1, dr 1600 ft; Roberts 3, dr 1520 ft; Roberts 4, rig; Roberts 5, dr 2510 ft; Roberts 7, rig; Roberts-Magnolia 1, dr 1070 ft. Mays-Nixon et al's Flowers 1, dr 2095 ft. Merrick & Lamb's Clay 3, sd, making gas 1735 ft; Clay 4, lcn. Sprague Oil Co.'s Roberts 1, spd and sd. Sun Oil Co.'s Settles 1, elev 2717 ft, top lime 2130 ft, sd after swabbing 420 bbls oil four hours at 2490-2540 ft. Tate-Weekly & Tubb's Roberts 3, set cas 1596 ft; Roberts 4, sp. Vitek Oil Co.'s Clay 2, coring sand pay 1742-80 ft. Bert Weekly Oil Corp.'s Roberts 1, dr 1650 ft.

HUDSPETH COUNTY — Amercan Land Co.'s Lockhart & Roseborough 1, sd 180 ft. Western States Oil Co.'s Gardner-Moseley 1, sd 1025 ft; S. W. Moore 1, crooked hole 1375 ft.

IRION COUNTY—P. E. Hill et al's Horney 1, sd with 600 ft fluid in hole 1270 ft. F. E. Webb et al's Nutts 1, spd and sd.

JONES COUNTY—R. F. Garland & Co.'s Glynn 1, dr 2550 ft. Mid-West Exploration Co.'s S. Phillips 1, lcn. Phillips Pet. Co.'s Winters 5, dr 1290 ft. Rhodes & Higher's Howell 1, dr 615 ft. J. N. Sloan et al's Bennett 1, spd and sd. W . G. Stough et al's Willis 1, sd 1740 ft.

KENT COUNTY—Marland Oil Co. & Texon O. & L. Co.'s Bilby 1, top salt 610 ft, dr 1305 ft.

KING COUNTY—Humble O. & R. Co.'s Pitchfork 1, co 3680 ft.

LOVING COUNTY—Delaware Oil Co.'s Lockhart Ramsey 1, sd 650 ft. Lockhart et al's Fee 1, top salt 708 ft, fsh 2260 ft. Owen-Sloan Oil Co.'s Johnson 1, elev 2943 ft, top salt 955 ft, dr 4270 ft.

MIDLAND COUNTY—Gholson et al's Moreland 1, top salt 1910 ft, dr 2125 ft. O. H. Shoup et al's Parks 1, spd and sd.

MITCHELL COUNTY—Boehm Drilling Co.'s Hyman 1, sd 505 ft. Paul Teas et al's Mills 1, elev 2187 ft, top lime 1298 ft, co after shot 1766 ft.

PECOS COUNTY—Benedum-Trees et al's Corder 1, rig. Buell-Hagan et al's Pryor 1, dr 190 ft. Say et al's Yates 1, sd hfw 1400 ft. Ditto Oil Co.'s Montgomery 1, lcn. Bob Elmore et al's M. Holmes 2, elev 2190 ft, top salt 435 ft, sd 990 ft. Everett et al's Fields 1, spd and sd. Furman Oil Co.'s McNear 1, materials. Gibson Oil Corp.'s Russell 1, elev 3509 ft, dr 1920 ft. Kershaw & Livingston's Cannon 1, top salt 1050 ft, dr 1835 ft. Kirby Pet. Co. et al's Tippett 1, rig. McDonald & Stanley's Parsell 1, dr 115 ft. Michaelson-Tabot & Roxana's Pecos River Bed 1, spd and sd. Mid-Kansas O. & Gas Co.'s Pryor 1, dr 370 ft. Miller & McNee's Tyrell 1, cellar. Oregon Oil Corp.'s Yates 1, sd 1150 ft. Phillips Pet. Co.'s Smith-Monroe 1, flow 200 bbls daily 1227-1372 ft; El Paso Cattle Co. 1, lcn. Roxana & Kirby's University 1, rig. Rowan & Tong's Scharf-Blackman 1, machine. Skelly Oil Co.'s Tippett 1, dr 560 ft. B. J. Spikes et al's Brown 1, sd 625 ft. Stidham & Thrasher's Belgrade 1, elev 2695 ft, top lime 1280 ft, sd 1460 ft. Trancontinental's University 1, dr 145 ft. Vacuum Oil Co.'s Elsinore 1, dr 1115 ft. World Oil Co.'s M. Cerf 1, elev 3435 ft, dr 1420 ft; Kloh 1, elev 2810 ft, ur 12½-inch cas 915 ft.

REAGAN COUNTY—The California Co.'s University 4, dr 740 ft. Hagan-Emch & Marland Oil Co.'s E. W. Loftin 1, top salt 1065 ft, elev 2610 ft, dr 1435 ft. Marland Oil Co.'s University 1, dr 480 ft. Moody Corp.'s Walters 1, rig. Roxana Pet. Corp.'s Sawyer 1, rig. Skelly Oil Co.'s University 2, rig. The Texas Co.'s Sugg 3, top salt 990 ft, dr 1215 ft. Texon Oil & Land Co.'s University 1-B, Group 1, sd 7665 ft. J. T. White et al's Schafer-Sterling 1, top salt 1275 ft, sd 2480 ft.

REEVES COUNTY—The Exploration Co.'s Kinney 1, sd 1930 ft. D. R. Thompson et al's Eddins 1, sd 5130 ft. Grisham-Hunter Corp.'s Rathage-Conner 1, top salt 1437 ft, dr 1100 ft. Vacuum Oil Co.'s Grisham-Hunter 1, dr 1550 ft. World Oil Co.'s B. T. Biggs 1-B, elev 3068 ft, top Delaware 2575 or 2594 ft, dr 2855 ft.

RUNNELS COUNTY—Empire Gas & Fuel Co. et al's Gray 1, elev 1771 ft, sd 2540 ft. Gibson-Johnson et al's Harris 1, lcn; Serratt 1, ur 10-inch cas 1675 ft. Globe Pet. Co.'s Webb 1, sr 1450 ft. Griswold et al's Boyer 1, sd 635 ft. Jones Oil Synd.'s Hale 1, fsh 1905 ft. Kennedy et al's Talley 1, sd 1455 ft. McLean et al's Clayton 1, sd hfw 1050 ft. Henry B. May et al's Schneider 1, elev 1666 ft, dr 1680 ft. Marland Oil Co.'s Russell 1, rig. Marland & E. L. Smith Oil Co.'s Herring 1, dr 155 ft. Miles Oil Co.'s Lawhon 1, co 2310 ft. Royal Pet. Co.'s Willingham 1, sr 1450 ft. R. B. Summers et al's Reese 1, dr 210 ft. Swensondale Oil Co.'s Werner 1, elev 1893 ft, dr 2180 ft. Vacuum Oil Co. and Ladd-Hill et al's S. S. Flanagan 1, lcn. Vacuum & Owenwood Oil Corp.'s Fowler 1, cellar dug. Watchorn O. & G. Co.'s King 1, elev 1660 ft, dr 2780 ft.

TAYLOR COUNTY—A. J. Brown Prod. Co.'s Henslee 1-A, elev 2010 ft, fsh 2925 ft. Gilbert Johnson et al's Brown 1, dr 2680 ft.

TERRELL COUNTY—Champlin Ref. Co.'s Carter 1, dr 1520 ft. Deep Rock Oil Co.'s Noelke 1, ur 1090 ft. Humble O. & R. Co.'s University 1, dr 1135 ft. Keck-Pecos Trust Co.'s Hamilton 1, dk. Milham Corp.'s Bassett 1, col cas 2409 ft. Miller Bros. et al's Allison-Murke 1, rig. Wooley-Jones et al's Parkenham 1, rig.

TERRY COUNTY—King Pet. Co.'s Brownfield 1, dr 3770 ft.

UPTON COUNTY—Curtis-Hults et al's Giddings 2, sd 975 ft. Texas Co.'s Cordova 1, sd 3201 ft.

WARD COUNTY—E. H. Devore et al's Black 1, spd and sd. Al Del Chabre et al's Monroe 1, spd and sd. Great Basin Oil Co.'s A. G. Davis 1, cellar dug. Estex Oil Co.'s Estes 1, lcn. Selby O. & G. Co.'s Dooley-Rogers 1, sd 500 ft.

WINKLER COUNTY—Amerada Pet. Corp.'s I. B. Walton 1, elev 2833 ft, sd making 15 million ft dry gas 2441 ft. Arizona Mining & Eng. Co.'s Hendrick 1, dr 1055 ft. Atlantic Oil Pord. Co. & Collett-O'Keefe's Hendrick 1-F, elev 2884 ft, top lime 2436 ft, coring 2740 ft. V. T. Bolin & Co. et al's Brown 1, dr 365 ft. Cranfill-Reynolds, Inc.'s Hendrick 1-C, elev 2842 ft, top salt 1751 ft, top lime 2480 ft, estimated 7000 bbls oil 2718-33 ft. Danciger O. & R. Co. et al's Sealy 1, rig. Gibson-Johnson et al's Lum Daugherty 1, elev 2883 ft, cored show oil and gas in lime 2704 ft. Independent O. & G. Co.'s Cowden-McCabe 1, fsh tools with 10 million ft gas 2423-25 ft. Roxana & Llano Oil Co.'s Scarborough 2, elev 2932 ft, top salt 1120 ft, dr 2770 ft. Sheldon & Burden et al's Hendrick 1, elev 2806 ft, top lime 2610 ft, co with 2500 ft oih after three shots, td 3243 ft. Southern Crude & R. A. Westbrook's E. G. Hutchings 1-T-90, (Sec. 47) big gas pay 2467-83 ft, dr 2600 ft. White Eagle O. & R. Co. et al's Leck-Collins 1, re-set 5-inch cas 3260 ft.

THERE MUST BE A REASON

Before we buy materials for use in making the Nuttall products, we must see a real reason why we should buy them.

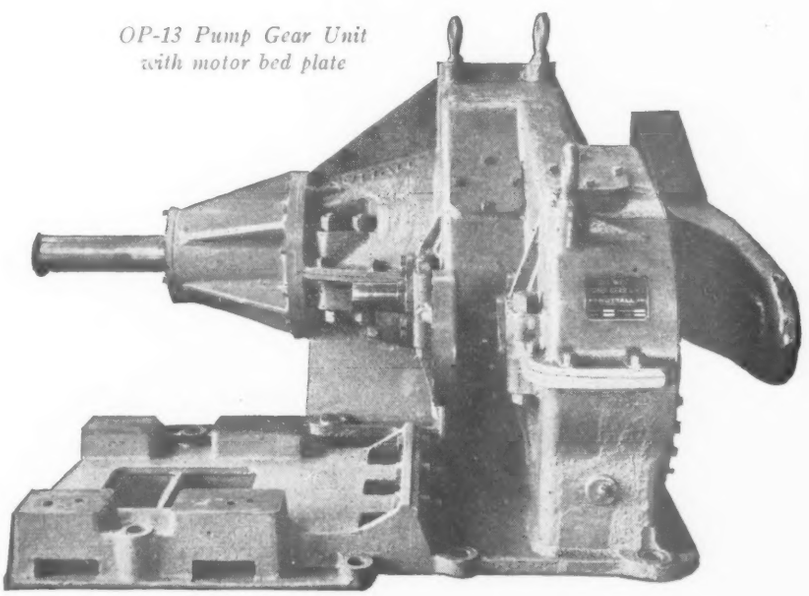
WE EXPECT THE OIL MAN TO DEMAND A REASON WHY HE SHOULD BUY AND USE A NUTTALL PUMP GEAR-UNIT

REASON No. 1

RECOVERY UNIT COSTS CAN BE REDUCED BECAUSE THE NUTTALL UNIT OPERATES ON PRACTICALLY A ZERO MAINTENANCE COST COMPARED TO 30% EFFICIENCY FOR THE ORDINARY BAND-WHEEL SET-UP.

WRITE FOR OUR BULLETIN NO. 62 IT GIVES MANY OTHER REASONS AS WELL AS OTHER VALUABLE DATA

OP-13 Pump Gear Unit with motor bed plate



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Authorized Distributor

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Say you saw it in The OIL WEEKLY

OKLAHOMA QUARTERLY PRODUCTION REPORT FOR FOURTH QUARTER 1927

Following is a list of companies reporting to the Oklahoma Corporation Commission on Gross Production Tax from oil and gas production. The list gives only those companies which reported production valued at more than $5,000 *or royalty of more than* $2,000.

Star (*) opposite the name indicates royalty. Names without star are producers.

Name. Address.	Bbls. of Oil	Value
H. N. & Ethel B. Andrews,* Newkirk		2,892.18
G. M. Abel,* Wewoka		3,067.35
S. W. Anthony, Mounds		14,222.62
B. N. Alton,* Tonkawa		9,252.20
Forest Anderson,* Earlsboro		6,631.94
American Oil Dev. Co., Pittsburgh, Pa.	6,105.47	7,587.36
Accumulative Royalties Corp.,* Tulsa	7,891.75	10,404.27
American Drilling Co., Lindsburg, Kan.		5,953.12
Amerada Ref. Corporation, Tulsa	5,999.58	8,081.70
Amerada Petroleum Corp., Tulsa	1,556,011.64	2,142,271.89
James M. Anthis,* Muskogee		2,657.86
N. L. Amster, Ardmore	7,007.25	11,147.38
C. F. Adams,* Ardmore	2,321.80	2,618.33
Alma Royalties Corp., New York City		16,508.57
Adams and Prince, Amarillo, Texas		8,635.86
S. A. Apple,* Ardmore		21,186.22
Alma Pet. Co., Oklahoma City		8,719.98
American Royalty Pet. Co.,* Tulsa	2,484.04	4,145.81
American Royalty Co.,* Long Beach, Cal.		3,051.54
American Natl. Bank,* Ardmore		2,889.15
American Oil & Refining Co., Oklahoma City		96,974.01
Argo Oil Co., Denver, Colo.		72,834.84
E. C. Aldridge,* Wewoka		40,115.38
F. Anderson,*	7,872.62	10,411.45
Anolu Pet. Corp.		11,615.46
Joe Abraham Est. & Fannie Abraham,* Bristow		6,009.63
Lizzie Allen,* Bristow		3,035.70
J. A. Alexander, Gdn.,* Okemah		2,309.58
J. M. Alexander,* Seminole		3,722.10
Agirine Oil & Gas Co., Tulsa		3,088.51
Almota Oil Co., Tulsa	5,130.94	6,460.79
American Pipe Line Co., Wichita Falls, Texas	6,539.52	8,642.99
Walter Andrews,* Weslaco, Texas		5,378.40
Atlas Royalties Co., Tulsa		9,383.45
Atlas Royalties Corp.,* Tulsa	8,091.00	10,512.70
Atlas Royalties Corp.,* Tulsa	85,349.77	115,279.81
Atlantic Oil Producing Co.,* Dallas, Texas	10,742.25	14,821.84
Atlantic Oil Prod. Co., Dallas Texas		27,082.37
Atlantic Oil Prod. Co., Dallas, Texas	610,302.96	812,520.26
Arthur Oil Co., Sistersville, W. Va.		11,867.67
Arkansas Fuel Oil Co., Pittsburgh, Pa.		8,780.67
Adams Royalty Co.,* Chicago, Ill.	88,637.31	127,310.30
Argo Oil Co.,* Denver, Colo.		4,151.14
Argo Oil Co., Denver, Colo.		106,240.31
Aztec Oil Co., Tulsa		11,429.32
Atlantic Oil Prod. Co., Philadelphia, Pa.		27,817.67
T. W. Atkins, Tulsa		8,403.31
W. I. Barker,* Ada		36,435.52
G. H. & Anna Barker,* Shawnee		49,134.97
G. H. & Anna Barker, Shawnee		3,232.57
W. I. Barker,* Ada		2,207.36
Nettie E. Beatty,* Los Angeles, Calif.	1,651.72	1,966.69
Earle Berryhill, Sapulpa		3,355.30
Earle Berryhill,* Sapulpa		3,411.40
C. B. Billington,* Shawnee	6,388.57	8,535.40
W. C. & Myrtle Bohanan,* Santa Fe, Okla.		2,581.09
J. W. Bledsoe,* Cordell	2,741.75	3,425.11
B. B. Blakeney,* Oklahoma City		5,532.57
A. M. Blow,* Tulsa		2,028.22
Ben and Emma Boepple,* Covington		2,547.14
Buchner Co.,* Holdenville		2,629.75
W. P. & Maud E. Brown, Okmulgee		2,014.02
T. J. Baker and A. D. Adcock,* Okmulgee		8,964.69
Bissett, Lytle and Gray, Tulsa	14,424.04	17,786.89
Hubert Barnum,* (Kay County)		4,412.41
Blue Ribbon Oil and Dev. Co.,* Shawnee		17,420.82
John L. Brock, Tr.,* Okmulgee		11,030.26
T. J. Baker,* Okmulgee		4,922.37
Stacy Baker,* Okmulgee		4,405.68
F. R. Billingslea,* Tulsa		31,550.72
Braden and Moore, Tulsa	5,633.40	8,351.93
James Ballard,* Cushing		4,666.34
Bay State Oil & Gas, Kansas City, Mo.	15,920.91	21,229.90
Elmer M. Birdsall,* Tulsa	4,170.02	5,479.12
J. J. Brown, Jr., Wichita, Kansas		2,614.73
A. C. Brown Oil Enterprise, St. Louis, Mo.	6,563.93	8,088.68
Black Sivalls and Bryson, Inc.,* Bartlesville	17,662.45	23,655.64
Black Sivalls and Bryson, Inc., Bartlesville	3,079.07	4,116.61
James E. Berry,* Stillwater		14,662.49
H. E. & Jessie F. Bryant,* Earlsboro		23,181.65
Thos. H. Bowlus,* Iola, Kansas		2,498.82
W. E. Berry,* Stillwater		13,356.00
G. M. Berry,* Pawnee		11,937.16
Thos. H. Berry & Harriet Berry,* Stillwater		15,833.73
George M. Billings,*		5,056.81
C. C. Bombarger,* Paden		3,249.66
Augusta Bucholz,* Perry		2,495.13
C. O. Buckles,* Tulsa		2,170.05
Beacon Oil Co., Bartlesville	7,121.28	8,758.95
A. E. Bowers,* Wellington, Kansas		1,950.53
James Brozell,* Oklahoma City		3,609.96
W. E. Brown,* Tulsa		2,159.03
Blackwell Oil & Gas, Blackwell		201,346.60
Blackwell Oil & Gas,* Blackwell		7,079.30
C. E. Burlingame Corp., Bartlesville	7,908.40	10,574.42
W. O. Broyles,* Stillwater		3,369.40
James Brann, Bartlesville	6,104.80	8,701.43
Gladys Bell Oil Co., Tulsa	17,342.50	31,777.00
Barnsdall Oil Co., Tulsa	2,266,786.67	2,999,562.44
Barnsdall Oil Co., Tulsa		63,867.76
Barnsdall Oil Co., Tulsa	177,097.66	222,396.65
Baltic Operating Co., Bartlesville	4,716.82	5,023.73
Mary F. Barrett,* Austin, Texas	2,107.49	2,676.51
Barbara Oil Co., Oklahoma City		13,538.67
Belco Royalties, Inc., New York City		44,197.67
Barnsdall Oil Co., Tulsa	177,097.66	222,396.65
Barnsdall Oil Co.,* Tulsa	95,049.35	126.030.51
E. L. Brown,* Tulsa		8,131.72
H. H. Brown, Gdn.,* Ardmore		4,729.49
S. J. Brown,* Duncan		3,093.56
Bermont Oil Co.,* Bristow	3,672.81	5,290.31
E. J. Blank,* Cushing		8,203.73
Geo. H. Brett,* Ponca City		6,608.71
John F. Burke & H. N. Greis,* Tulsa		14,225.59
Burke-Greis Oil Co., Tulsa		104,501.68
Burks-Hoffeld Oil Co., Tulsa		9,141.15
W. L. Brittain,* Oklahoma City		2,524.93
Branan Oil Co., Inc., Tulsa		12,258.00
J. G. Beard and S. I. Kolb, Duncan		9,337.57
J. G. Beard and S. I. Kolb, Duncan	5,077.78	7,273.44
Beard and Crump, Duncan		10,485.53
Britton-Johnson Oil Co., Tulsa	6,193.98	7,114.69
W. A. Brown,* Sulphur		2,174.52
Henrietta M. Billings,* Enid		5,095.15
W. S. Billings, Enid		4,931.37
Mrs. R. E. Burks,* Braman		2,905.91
G. A. Biddle,* Braman		2,905.90
John H. Bennett,* Pauls Valley		3,452.09
Geo. S. Bole,* Tulsa	2,549.90	3,648.03
Bart Royalty Co.,* Bartlesville	3,866.73	5,168.37
Geo. S. Bole, Tulsa	12,542.37	17,022.73
Mr. and Mrs. L. A. Brown,* Shawnee		7,658.19
Frank Breene, Tulsa	6,721.20	7,881.13
J. L. Bryan,* Chickasha		2,466.02
Wm. Buck,* Wetumka		6,401.60
Katie Snell, nee Brown,* Dustin		3,412.72
J. M. Bumpass,* Duncan	4,957.03	5,754.58
L. J. Burkhalter,* Blackwell		3,365.93
Roy Buckner,* Wewoka		3,107.16
Frank Buttram, Oklahoma City		8,615.09
Frank Buttram,* Oklahoma City		25,346.09
Bartlett Dev. Syndicate No. 1,* Sapulpa		7,208.16
A. O. Baker,* Shawnee		2,490.34
Geo. Baker,* Maramec		3,666.63
Geo. Baker, Maramec		5,158.72
Baker & Strawn, Tulsa		11,359.96
G. L. Benson,* Holdenville		2,114.00
J. W. Bird & Wm. Hanley, Bradford, Po.	6,200.08	7,813.84
E. R. Bechtel,* Blackwell	3,518.97	4,718.89
Chas. W. Boggs, Los Angeles, Calif.	11,021.09	13,333.67
Beggs Oil & Gas Co., Okmulgee	4,697.80	5,364.35
Henry Born,* Seminole		2,883.57
Lula Bowlegs,* Seminole (supplemental)		14,334.00
First Natl. Bank for Bradley & Bradley, Muskogee		9,030.19
Black, Sivolls & Bryson, Inc., Bartlesville		3,593.39
J. H. Bellis,* Cushing		3,541.60
F. M. Belveal,* Enid		3,537.61
V. E. Bolene,* Long Beach, Cal.		2,303.94
Berry Pet. Co., Tulsa	16,315.46	21,003.98
Geo. F. Breen, New York City	15,486.58	18,775.21
B. J. Badger,* Okmulgee		2,165.66
George M. Billings,* Long Beach, Calif.		5,056.81
H. A. Born,* Seminole		6,497.57

Name. Address.	Bbls. of Oil	Value
Laura A. Clubb,* Tulsa	.....	15,696.14
I. M. Clubb,* Kay City	11,377.00	15,628.56
Coline Oil Co., Oklahoma City	6,554.88	8,318.94
Coline Oil Co., Oklahoma City	60,486.01	62,211.06
Cities Service Gas Co., Bartlesville	.....	12,982.83
Cities Service Gas Co., Bartlesville (suspense)	.....	868.80
Commercial Drilling Co.,* Tulsa	6,357.76	8,869.24
A. V. & L. B. Cluck,* Seminole	.....	36,457.12
W. S. Churchill,* Tulsa	4,381.02	5,837.15
W. A. Carson,* Oklahoma City	.....	10,564.40
Noah J. Caves,* Stroud	.....	2,310.66
Clarissa Conyers,* Covington	.....	2,238.83
W. J. Connell,* Kingman, Kansas	.....	6,377.15
J. D. Campbell,* Seminole	.....	101,319.27
Cushing Ref. and Gasoline Co., Cushing	.....	6,191.67
Central Commercial Oil Co., Tulsa	1,847.33	2,507.61
Anna S. Cook,* Muskogee	.....	17,499.88
Craig and Andrews, Receivers, Chandler	.....	2,204.94
G. W. Connelly, Caney, Kansas	.....	13,083.69
W. S. Critchlow, Ardmore	.....	19,678.89
John C. Campbell,* Oklahoma City	.....	4,571.74
W. C. Cline,* trustee, Newkirk	.....	2,051.18
Edwin B. Cox & Jake L. Hamon,* Ardmore	.....	24,842.30
S. C. Canary, Tulsa	6,594.99	8,116.55
Chestnut & Smith Corp., Tulsa	3,291.11	4,441.75
W. S. Cline,* Newkirk	.....	2,827.81
Anna Elizabeth Cox,* Ardmore	.....	4,250.27
Dorothy Carmichael,* Tonkawa	.....	3,119.01
D. H. Campbell,* Wewoka	.....	8,444.80
J. R. Carpenter,* Stroud	.....	6,360.91
J. G. Catlett,* Tulsa	.....	33,423.65
Callaway & Rosa Rogers,* Earlsboro	.....	96,714.61
C. Guy Cutlip,* Wewoka	.....	3,937.84
J. H. Carlock, trustee, Ardmore	.....	5,042.55
O. L. Chambers,* Tonkawa	.....	4,619.11
H. E. Clark, Philadelphia, Pa.	.....	23,785.34
Dillard H. Clark, Jr.,* Ponca City	.....	5,779.45
Colson Oil Co., Tulsa	11,614.64	13,893.62
H. E. Clark, Okmulgee	.....	14,540.59
Central Natl. Bank, Okmulgee	.....	25,807.46
Conservation Oil Co., Tulsa	20,417.98	26,437.35
Cortez Oil Co., Tulsa	.....	6,066.98
Marcy C. Coates & Wirt Franklin,* Ardmore	2,769.86	3,470.24
Calloway & Rosa Rogers,* Earlsboro	.....	4,191.49
E. W. McCrary,* Tulsa	2,412.47	2,972.06
Champlin & Bass, Inc., Holdenville	5,500.35	7,085.84
J. R. Cole, Jr., Tulsa	.....	8,926.11
Clark & Cowden, Duncan	20,699.26	26,397.68
Cudahy Oil Co., Cleveland, Ohio	12,992.09	15,480.66
Claude Cockrell,* Hunter	1,590.58	2,322.25
J. O. Chapman,* Waxahachie, Texas	2,679.79	3,626.28
Charley Caroline,* Wewoka	.....	3,413.55
Cumberland Pet. Co., Cleveland, Ohio	10,315.44	13,270.17
Cities Service Gas Co., Bartlesville	.....	88,407.67
Annie S. Cook,* Muskogee	.....	6,973.62
Colonial Royalties Co. & J. P. Cappeau, Jr. Tulsa	.....	17,619.60
R. A. Cowden,* Shawnee	.....	3,256.43
Commonwealth Trust Co., Okmulgee	4,495.98	5,667.39
Caddo Oil Co., Tulsa	18,966.17	24,127.59
Cotton Belt Pet. Co., Tulsa	18,938.15	21,824.13
Central Natl. Bank for Cato Oil & Gas Co.	.....	30,585.62
Thos. Conner, Dec. by Betty Conner,* Eufaula	.....	3,888.92
Geo. S. Carman,* Bristow	.....	3,282.80
Samuel J. Caudill,* Tulsa	3,133.33	4,680.86
Claude Oil Royalties Corp.,* N. Y. City	.....	20,331.85
L. E. Crews, Heirs, Enid	1,393.65	2,166.85
J. A. Chapman,* Tulsa	7,444.80	10,727.30
J. D. Campbell,* Seminole	3,763.70	4,930.78
Clarion Oil Co., Houston, Texas	7,091.24	9,199.48
Creo Oil Co., Tulsa	6,412.05	7,682.97
Crews Estate Oil & Gas,* Enid	9,755.66	16,047.98
J. D. Campbell,* Seminole	.....	56,462.62
Carter Oil Co., Tulsa	4,312,222.36	5,637,465.21
Carter Oil Co., Tulsa	.....	298,501.00
Continental Oil Co., Denver, Colo.	704,427.28	918,087.92
Continental Oil Co., Denver, Colo	.....	14,794.22
Continental Oil & Ref. Co., Independence, Kan.	7,369.61	9,414.22
Continental Oil Co., Tulsa	7,128.97	10,993.10
Champlin Refining Co., Enid	9,064.85	13,327.84
Champlin Refining Co., Enid	.....	13,320.48
Champlin Refining Co., Enid	134,880.96	184,424.63
Comar Oil Co., St. Louis, Mo.	932,139.51	1,297,291.67
Comar Oil Co., St. Louis, Mo.	.....	63,595.44
W. A. Currie,* Columbus, Ohio	.....	6,772.68
Doss Oil Royalty Co.,* Oklahoma City	28,656.14	37,504.69
E. D. Davis Oil Co., Oklahoma City	.....	8,628.14
Lillie Davis,* Trousdale	.....	2,447.14
Annie Day,* Earlsboro	9,901.07	13,125.02
J. F. Day,* Earlsboro	5,725.09	7,596.79
C. E. Denney,* Alma	.....	2,663.38
J. F. Darby,* Muskogee	.....	2,363.36
Harry H. Diamond,* Holdenville	.....	2,931.88
Elmer Dickason,* Gueda Springs, Kan.	.....	2,175.26
J. D. Doneghy,* Tulsa	2,031.86	2,597.75
U. T. Duncan,* Braman	.....	2,247.24

Name. Address.	Bbls. of Oil	Value
V. E. Dillard,* Ardmore	.....	4,355.60
Delaware Consolidated Oil Co., Tulsa	28,092.98	33,142.51
J. L. Dixon,* Wewoka	.....	8,505.28
W. L. Dixon,* Duncan	.....	3,888.93
W. Y. Dilley,* Trustee, Waurika	6,122.75	6,559.49
D. B. Duff,* Cleveland, Ohio	.....	5,086.35
P. C. Dings,* Chicago, Ill.	2,299.75	3,167.17
H. H. Darks,* Oklahoma City	.....	2,105.75
V. E. Dillard,* Ardmore	4,835.10	5,945.59
J. J. Deaner,* Okmulgee	.....	9,449.00
Henry Mason Day,* New York City	.....	2,267.12
L. S. Dolman,* Ardmore	.....	2,305.77
Emry Davis,* New York City	.....	4,331.44
Henry Depew,* New York City	.....	2,417.16
Daisy Belle Petroleum Co., Ardmore	.....	8,569.64
Douglas Oil Co., Tulsa	.....	4,101.66
O. H. Douglas,* Okmulgee	92,081.94	4,233.61
H. T. Douglas,* Shawnee	.....	7,707.28
Delmar Oil Co., Bartlesville	25,240.70	36,881.59
J. H. Dillard,* St. Louis, Mo.	.....	5,319.03
Darley Petroleum Corp. of N. Y., Tulsa	228,607.55	310,718.82
Dover Inv. Co., Bartlesville	1,988.45	2,562.30
Hector Derdeyn & Sylvia Derdeyn,* Pauls Valley	.....	2,173.60
Devonian Oil Co., Tulsa	86,103.49	121,408.34
B. F. Davis,* Wewoka	.....	10,963.30
J. A. Doyle,* Wewoka	.....	9,059.70
Clement Davis,* Shawnee	.....	5,402.04
Beatrice H. Davis, Tulsa	5,995.93	7,895.56
Denver Prod. & Ref. Co., Okmulgee	123,891.25	164,704.29
Joe Dixon,* Norman	.....	2,690.43
L. R. Davis, Tulsa	6,777.57	8,914.43
Deep Rock Oil & Ref. Co., Tulsa	91,852.94	141,835.58
Dixie Drilling Co., Sapulpa	20,841.89	12,003.60
Dixie Oil Co., Inc., Shreveport, La.	218,131.96	304,006.83
Delk Investment Corp.,* St. Louis, Mo.	.....	5,826.31
Ellen Oil & Gas Co., Tulsa	.....	5,298.36
Equitable Royalties Corp.,* Shawnee	.....	8,819.95
P. C. Elswick, Lamont	.....	8,554.62
Ellis Drilling Co., Wichita Falls, Texas	5,890.72	8,119.92
Elliott & Vensel, Tulsa	.....	8,263.00
Elm Oil Co.,* Tulsa	3,005.18	3,846.48
Eastern Royalties Corp.,* New York City	.....	18,977.72
T. T. Eason,* Enid	7,839.88	11,770.12
Eagle Picher Lead Co., Henryetta	1,975.95	7,303.39
C. C. Endicott, Est.* Tonkawa	.....	3,424.02
Lewis Emery, Jr. & Sons, Bradford, Pa.	6,872.60	8,226.39
G. W. Edwards,* Seminole	.....	13,914.10
Empire Oil & Refining Co.,* Bartlesville	66,375.12	89,801.30
Empire Oil & Refining Co., Bartlesville	.....	949,043.00
Empire Oil & Refining Co.,* Bartlesville (susp.)	3,823.42	4,892.53
Empire Oil & Refining Co., Bartlesville (susp.)	3,522.91	4,640.24
Empire Oil & Refining Co., Bartlesville	1,775.49	2,154.90
Enid Bank & Trust Co., Trustee,* Enid	.....	12,122.95
Edgwood Oil Co., Tulsa	12,696.47	16,837.28
Enfisco Oil Corp., Tulsa	15,382.13	19,160.28
Chas. W. Flint,* Tulsa	.....	4,169.42
J. C. Fare,* Wewoka	.....	2,130.63
Lena Fitzgerald,* Blackwell	.....	30,623.97
J. T. Fennell,* Pauls Valley	.....	2,992.51
Foster Oil Co., Tulsa	.....	13,202.08
James F. Foster,* Anthony, Kansas	.....	4,813.45
Foster and Davis, Inc., Bartlesville	9,332.14	12,068.83
Foster Pet. Corp.,* Bartlesville	9,277.72	12,366.95
S. M. Fregate, Gdn.,* Maramec	.....	2,355.54
A. C. Fletcher,* Deer Creek	.....	2,353.14
Feagin-Gant & Garvin,* Duncan	.....	6,977.11
N. B. Feagin,* Ardmore	.....	3,578.69
Flora Oklahoma Oil Co., Cement	4,731.56	5,979.86
W. H. Franks,* Seminole	.....	17,284.71
Rosie J. Franks,* Seminole	.....	69,210.19
D. W. Franchot & Co., Tulsa	39,673.09	50,767.93
D. F. Fleet,* Ada	.....	9,770.79
Alice Fleet, Gdn.* Ada	.....	8,200.62
J. C. Fare, Wewoka	.....	10,835.33
J. P. Flanagan,* Tulsa	.....	3,827.93
A. W. Falkenburg,* Wewoka	.....	6,424.65
D. Flynn, Oklahoma City	.....	3,335.98
Fern Oil & Gas Co., Yale	8,954.79	11,589.20
Finance Oil Co., Gowanda, N. Y.	16,226.27	20,607.05
Mary Faskin,* Shawnee	.....	3,772.05
Thos. Ryan,* Flanagan, Ill.	.....	7,346.52
K. C. Farwell,* Chickasha	.....	5,647.48
Kathenore Louise Farwell,* Chickasha	.....	2,094.97
D. C. Fitzgerald, Trustee, Ardmore	6,523.71	8,181.44
Geo. Frederick,* Santa Monica, Cal.	.....	2,543.61
A. L. Frederick,* Santa Monica, Cal.	.....	2,543.63
Fred J. Frederick,* Santa Monica, Cal.	.....	3,514.10
Mildred A. Frederick,* Santa Monica, Cal.	.....	2,633.04
Eliza Fugate,* Oalagah	.....	4,384.39
Fox Royalty Co., Tulsa	20,321.47	24,351.77
Mona R. Farren, Tulsa	1,000.33	1,586.13
G. W. Frazier,* Kingfisher	.....	30,424.25
Harry B. Folk,* Sand Springs	4,040.27	5,538.05
Fixico Oil Co., Tulsa	.....	15,035.95
Fort Ring Oil & Gas Co., Ft. Worth, Texas	.....	5,888.59
A. M. Frierson,* Bristow	.....	2,103.51
Fagar Oil & Gas Co., Garber	5,693.28	7,758.72

Name. Address.	Bbls. of Oil	Value
Fuhrmon Pet. Co., Okmulgee	.....	25,517.66
Fuhrmon Pet. Co.,* Okmulgee	.....	3,027.66
Foster Pet. Corp., Bartlesville	395,905.55	548,676.34
Wirt Franklin,* Ardmore	12,784.06	15,731.52
Wirt Franklin Pet. Corp., Ardmore	160,594.55	267,612.53
C. I. Grimelawe,* Shawnee	23,224.47	3,502.03
Garner Royalties, Inc.,* Long Beach, Cal	.....	6,872.34
Gates Oil Co., Ardmore	10,192.49	12,138.66
J. Wood Glass,* Nowata	4,042.63	5,114.36
Goldelline Oil Corp., Oklahoma City	18,045.19	23,646.03
Guaranty Trust Co.,* New York City	.....	4,955.31
Est. of W. A. Graham,* Clarion, Pa.	.....	3,158.36
H. I. Grimes,* Oklahoma City	.....	4,386.13
Gypsy Oil Co.,* Tulsa	.....	10,387.63
N. T. Gilbert, Agt., Tulsa	4,025.01	5,402.48
Crisella Graham,* Tulsa	11,875.00	9,337.68
J. D. & Mabel Garner,* Wewoka	.....	2,442.44
F. H. Greer,* Tulsa	.....	2,501.35
F. H. Greer,* Tulsa	.....	2,588.97
V. L. Goltry, Enid	.....	4,457.54
W. E. Grisso,* Seminole	.....	88,168.96
James H. Graham, Tulsa	7,599.49	10,013.11
Galvez Oil Corp., Tulsa	6,993.81	12,521.04
N. S. Ginsberg, Muskogee	.....	5,505.02
N. S. Ginsberg, Muskogee	.....	9,970.06
C. M. Gordon,* Muskogee	.....	2,023.56
Gardner Pet. Co., Tulsa	24,962.74	34,700.58
Gilcrease Oil Co., Tulsa	24,030.80	31,363.59
Glass & Harmon, Nowata	10,676.10	13,846.77
Gray Oil Co., Tulsa	5,072.74	6,487.16
Gilliland Oil Co., Tulsa	23,352.78	32,070.23
Annie Gahagan,* Wewoka	.....	30,961.14
M. L. Glass,* Tulsa	.....	2,137.12
Frank G. Gunn, Tulsa	.....	2,443.20
Geo. M. Gillet, Jr., Trustee, Baltimore, Md.	1,636.29	2,402.74
Gilmer Oil Co.,* Ardmore	.....	92,460.60
Ola Goodson, Blackwell	.....	6,718.61
Gypsy Oil & Gas Co., Tulsa	339,511.71	443,000.40
Gypsy Oil & Gas Co., Tulsa	3,509,518.96	4,637,259.98
Gypsy Oil & Gas Co., Tulsa	.....	140,370.72
Gypsy Oil & Gas Co., Tulsa	.....	27,398.11
Gypsy Oil & Gas Co.,* Tulsa	2,003.10	2,476.43
F. A. Gillespie & Sons Co., Tulsa	.....	27,415.05
Grimes & Gillespie, Tulsa	15,607.08	21,487.06
Nel Kenan Gill,* Okmulgee	.....	3,804.50
Nel Kenan Gill,* Okmulgee	.....	7,711.88
Edward Gault Estate,* Coon Rapids, Iowa	.....	2,516.69
Edward Galt,* Ardmore	1,806.21	2,237.57
Edward Galt, Ardmore	8,490.17	10,033.22
Glad Oil Co., Tulsa	14,822.17	20,185.30
Galer Oil Co., Tulsa	.....	22,584.67
Gorton Trust, Cement	10,620.20	13,307.53
W. E. Grissa,* Seminole	.....	9,485.27
E. L. Gibson,* Seminole	.....	2,130.31
Geo. B. Grieves, Terlton	.....	15,579.67
Georgia Oil & Gas Co., Copan	2,402.19	3,734.56
Thos. Gilcrease, Tulsa	3,595.56	4,598.09
Thos. Gilcrease,* Tulsa	1,174.05	1,501.40
R. F. Garland, Tulsa	.....	21,253.67
R. F. Garland & Co., Tulsa	34,776.36	23,262.78
J. N. Harber,* Seminole	.....	23,652.16
Mary Harber,* Seminole	.....	17,508.55
R. T. Harber,* Seminole	.....	5,690.76
W. E. Harber,* Seminole	.....	22,101.67
Home Stake Oil & Gas Co.,* Seminole	.....	163,121.44
Humble Oil & Ref. Co., Houston, Texas	337,653.19	404,680.10
Humble Oil & Ref. Co., Houston, Texas	.....	18,861.27
Houston Oil Co. of Texas, Houston, Texas	75,118.95	101,489.65
Houston Oil Co. of Texas, Houston, Texas	.....	2,319.73
J. C. Hartley, Agt.,* Garber	.....	8,992.54
A. D. Horton,* Hawarden, Iowa	5,291.07	6,336.81
Harris & Haun, Inc., Blackwell	.....	41,981.83
Highway Oil Ref. Corp., Tulsa	7,396.70	9,626.16
Wm. L. Hughes,* Sapulpa	.....	3,390.03
E. L. Harris,* Wewoka	2,118.78	2,839.05
E. L. Harris, Trustee,* Wewoka	15,534.59	20,907.01
A. N. Hopkins,* Davenport	1,922.26	3,354.53
G. W. & Lucy Hearn,* Earlsboro	.....	15,687.21
S. B. Hammons,* Seminole	.....	4,178.50
J. E. Hall,* Sasakwa	.....	5,955.66
Ruth M. Hall,* Holdenville	.....	4,273.66
W. P. Higgins & Mary R. Higgins, Oklahoma City	.....	2,010.65
Hembro Oil Co., St. Louis, Mo.	4,562.80	5,656.24
Dr. J. N. Helmer, New York City	.....	2,081.80
W. E. Hightower,* Oklahoma City	3,278.25	4,677.00
W. H. Hampton,* Okmulgee	5,264.47	6,995.83
P. J. Hill,* Shawnee	.....	52,731.91
Thos. J. Horsley,* Wewoka	.....	6,909.50
Cecil H. Harris,* Shawnee	.....	3,085.30
U. C. Homesley,* Earlsboro	.....	17,362.94
Heiner Co.,* Oklahoma City	.....	4,712.48
Dora Hartley Linn, Estate of, Enid	.....	2,248.13
Harry Hanbury, Duncan	.....	8,821.55
Henderson Oil Co., Marietta, Ohio	5,279.04	6,469.47
E. N. Horton,* Ardmore	.....	2,547.79
J. A. Hull Co., Tulsa	94,892.79	131,137.79
J. L. Hull,* Seminole	.....	4,246.48
Herbert Oil Co., Ft. Worth, Texas	4,790.55	6,345.94
H. G. Hendricks, Atty., Bristow	.....	6,837.77
Mollie E. Howell,* Wellington, Kansas	.....	5,140.17
G. W. Hicks,* Cox City	.....	4,441.90
Marie S. Henry, New York City	.....	3,355.10
Arch H. Hyden,* Tulsa	1,503.12	2,105.62
Erskine Hewitt,* New York City	.....	2,591.57
S. J. Hernstadt, Trustee,* Ardmore	2,194.35	2,607.11
N. Hernstadt,* New York City	4,148.36	5,067.54
Healdton Oil & Gas Co., Enid	22,874.12	34,087.94
Healdton Oil & Gas Co.,* Enid	3,642.47	4,885.75
Benz T. Hall,* Los Cruces	.....	2,459.75
S. E. & M. W. Hawk,* Miami	.....	2,314.20
Elizabeth C. Hayes, Oklahoma City	6,157.07	8,344.52
Harland Oil Co., Walco	16,949.71	22,673.55
Harold Pet. Co., Blackwell	13,265.82	21,465.98
Home Gas Co. of Cushing, Cushing	6,394.87	26,797.46
Estate Jake L. Hamon, Ardmore	11,340.70	7,422.52
Estate Jake L. Hamon, Ardmore	12,162.08	7,551.96
Hamon & Colcord, Ardmore	8,859.97	11,346.03
Hamon & Colcord, Ardmore	9,949.73	10,365.86
A. Harber,* St. Louis, Mo.	.....	4,553.30
Max Hesslein,* New York City	.....	5,928.85
Homaokla Oil Co.,* Oklahoma City	15,893.01	20,235.15
Homaokla Oil Co., Oklahoma City	84,620.42	107,687.12
Home Oil Co., Tulsa	2,900.44	2,823.21
O. R. Howard, Tulsa	10,182.73	12,018.78
E. C. Hanford,* Sand Springs	1,515.09	2,076.77
Hemlock Oil Co.,* Tulsa	1,491.42	2,280.45
Hemlock Oil Co., Tulsa	1,381.58	10,317.62
Hall & Briscoe, Inc., Chickasha	23,721.81	29,409.62
J. E. Hosack, Blackwell	.....	11,531.03
Gus W. & Dock H. Hearn,' Earlsboro	.....	20,627.03
Richard Hughes,,* Tulsa	.....	2,356.00
W. E. Harber,* Seminole	.....	28,858.69
J. W. Henry, Tulsa	10,141.61	14,441.27
T. J. Hughes, Cushing	.....	10,315.98
W. M. Hewitt, Okmulgee	.....	8,042.28
J. E. Hayes,* Newkirk	.....	2,123.14
O. M. Irelan, Sapulpa	10,622.88	15,476.63
Iowa O. & Ref. Co.,* Hawarden, Ia.	.....	8,754.09
Imperial Royalties Co,* Kansas City	34,671.23	48,804.79
Interocean Oil Co., Tulsa	43,808.36	56,004.58
J. A. Ingram, Shawnee	.....	68,974.87
Lucile Ingram,* Shawnee	.....	3,520.39
Gladys Ingram,* Shawnee	.....	3,520.39
Mildred Ingram,* Shawnee	.....	3,222.97
Leonard D. Ingram,* Muskogee	.....	4,152.24
Illinois-Okla. Pet. Corp., Duncan	.....	5,803.28
Indian Royalty Co.,* Okmulgee	.....	46,351.45
J. D. Inscone,* Duncan	.....	2,776.52
Imo Oil & Gas Co., Covington	.....	14,748.60
Independent Oil & Gas Co., Tulsa	.....	1,631,860.89
Independent Oil & Gas Co.,* Tulsa	.....	4,524.64
Independent Oil & Gas Co., Tulsa	4,356.74	5,942.61
Iron Mountain Oil Co., Tulsa	.....	1,525.64
Iron Mountain Oil Co., Tulsa	16,974.29	22,212.66
Investors Royalty Co., Inc.,* Tulsa	20,056.70	26,922.14
Indian Terr. Ill. Oil Co.,* Bartlesville	68,880.69	92,118.42
Indian Terr. Ill. Oil Co., Bartlesville	2,843,656.94	4,095,644.41
Indiana Oil & Gas Co., Tulsa	26,434.38	37,218.27
Leo Jacobs, St. Louis, Mo.	6,173.71	7,980.49
Leo Jacobs, St. Louis, Mo.	6,617.18	8,307.34
John B. Jameson,* Concord, N. H.	.....	2,238.29
Wm. P. Jennings,* Shawnee	.....	3,408.07
J. Edward Jones,* New York City	.....	11,264.01
R. C. Jones, Inc., Cushing	15,135.79	22,298.13
Robert Jones,* Wewoka	.....	4,742.64
B. F. & Mary Eva Johnson,* Seminole	.....	7,127.70
Edith M. Johnson,*	.....	3,684.70
C. O. Johnson, Durant	.....	5,539.17
C. O. Johnson & Geo. C. Pendleton, Durant	.....	32,466.11
Johnson Oil Ref. Co., Chicago, Ill.	5,885.86	7,653.01
Willard Johnston,* Shawnee	.....	9,814.58
C. W. Johnston,* Seminole	.....	2,452.96
Robert K. Johnston,* Okla. City	.....	2,315.02
Junction Oil & Gas Co., Newkirk	4,251.57	5,584.69
L. B. Jackson, Sapulpa	4,875.62	7,489.98
L. B. Jackson,* Sapulpa	7,955.52	10,622.71
C. O. Johnson & Geo. C. Pendleton, Durant	.....	32,466.11
Wise & Jackson, Sapulpa	5,699.75	6,466.55
E. H. Jennings Bros., Pittsburgh, Pa.	4,925.45	6,612.40
R. G. Jennings, Pittsburgh, Pa.	18,412.93	27,009.99
Watson B. Joyes,* Okmulgee	2,392.62	3,167.95
Johneda Oil Co., Tulsa	5,628.88	7,086.65
Robert L. Jones,* Bristow	3,125.35	7,979.67
Josey Oil Co., Tulsa	182,444.64	266,685.40
Annie E. James,* Seminole	.....	3,423.16
W. O. Kays,* Shawnee	.....	3,643.18
Robert S. Kearney,* New York City	.....	10,035.15
Stella & L. Keck,* Nocona, Texas	.....	4,115.29
Mary E. Killingsworth,* Seminole	.....	3,007.83
Mary Etta Killingsworth,* Seminole	.....	30,131.61
Frank Knappenberger,* Seminole	.....	15,460.17

Name. Address.	Bbls. of Oil	Value
J. D. Kimmel,* Tulsa	.....	3,035.43
Knupp Oil Co., Warren, Pa.	4,472.68	5,621.17
S. P. Kennedy,* Bradford, Pa.	1,794.13	2,394.15
J. H. Kennedy,* Wetumka	.....	2,093.51
Gail R. Kennedy,* Okemah	6,579.25	9,203.29
A. D. Kennedy,* Okmulgee	3,267.77	4,460.07
Emma B. Kennedy & Trustee,* Okemah	.....	43,951.91
Knickerbocker Oil Co., Tulsa	8,240.54	11,065.75
Geo. Kinney & Trustee, Tulsa	.....	5,413.61
Albert Kelly,* Bristow	.....	3,036.92
Kisner Royalty Co.,* Garber	.....	3,188.36
Keener Oil & Gas Co.,* Tulsa	1,643.93	2,396.82
Keener Oil & Gas Co., Tulsa	41,680.02	50,973.53
R. J. Koch,* Checotah	.....	5,175.09
C. C. Kimble, Beggs	.....	6,677.04
Kewanee Oil & Gas Coa., Titusville, Pa.	441,395.62	626,056.32
Kirk Oil Co., Ardmore	7,579.83	9,851.76
J. T. King, Okmulgee	5,872.39	7,998.11
Helen W. King,* Orange, Calif.	.....	28,246.71
Helene W. King,* Orange Calif.	.....	8,577.48
Sarah J. Knotts,* Stillwater	.....	16,451.28
Kingwood Oil Co.,* Okmulgee	1,463.47	2,006.89
Kingwood Oil Co., Okmulgee	220,282.98	296,020.41
W. L. Kistler, Inc.,* Tulsa	.....	62,246.83
Kay & Kiowa Oil Co., Tulsa	15,041.68	19,580.43
Kay & Kiowa Oil Co., Tulsa	.....	434.62
Leroy R. Kiefer,* Osceola, Mo.	.....	3,071.43
B. C. King & W. A. Delaney,* Ada	.....	2,936.21
Vernon L. Kiker & Bessie D. Kiker,* Wewoka	6,253.83	8,609.27
Frank L. Ketch,* Okla. City	1,988.42	2,349.26
John C. Kunkel, Jr.,* Tulsa	.....	2,492.45
Chas. E. Knox, Enid	9,889.22	14,916.26
Kay Oil Co., Blackwell	43,261.55	59,882.45
R. R. Kisner,* Enid	.....	3,706.89
Minnie L. Kisner,* Enid	.....	3,706.89
Lilami Oil Corp. (formerly Boggs Oil Corp),, Okla. City	.....	26,657.37
Louisiana Oil Ref. Corp., Shreveport, La.	105,046.70	137,607.97
Link Oil Co., Tulsa	12,922.27	17,054.17
Lewis Production Co., Pittsburgh, Pa.	155,059.60	202,539.78
E. E. Long,* Prague	.....	17,579.44
A. M. Landon, Independence, Kan.	.....	10,590.37
B. D. Lack,* Wewoka	.....	33,203.52
Wm. Lamb,* Cleveland	.....	10,036.50
Large Oil Co., Bartlesville	4,293.75	6,328.19
Lyons Pet. Co., Denver, Colo.	.....	44,773.00
Lone Star Gas Co., Dallas, Texas	14,149.10	25,248.99
Park B. Lamberton,* Tulsa	2,807.91	4,152.05
Lambert & Germain,* Tulsa	.....	4,038.68
E. Gibson Lewis,* Tulsa	.....	2,024.93
Little Nick Oil Co., Chickasha	.....	20,131.29
Florence Lindley,* Sapulpa	.....	16,110.24
Nancy J. Laughlin,* Cushing	.....	2,779.31
C. K. Lambert and J. A. Spicer, Okmulgee	.....	14,124.97
Laurel Oil & Gas Co., Tulsa	34,059.46	45,656.99
Little Fay Oil Co. & J. M. Gillette, Tulsa	4,544.49	6,639.44
Little Fay Oil Co., Tulsa	37,139.08	49,172.07
W. S. Livingston,* Seminole	.....	25,944.92
John Lohman,* Altus	.....	6,741.42
Lewis, A. W.,* Ollie, Mont.	4,900.32	6,827.99
L. H. Love, Ardmore	2,381.54	5,132.18
LeFlore County Gas & Elec. Co., Poteau	.....	12,438.71
E. B. Lawson, Nowata	4,386.03	5,450.03
Isabella W. Laidlow,* New York City	.....	1,981.76
W. T. Laughlin,* Okla. City	.....	6,731.13
Dewey Y. Lyles,* Ardmore	.....	11,368.28
C. H. Lebow,* Tulsa	8,412.64	10,978.49
Lima Oil & Gas Co., Bartlesville	7,158.65	57,887.14
Henry Lytal,* Okla. City	.....	2,959.25
C. C. Longacre,* Shawnee	.....	6,749.00
H. L. and Martha Lee Ingram,* Earlsboro	.....	13,664.80
T. E. Laselle,* Ada	14,759.48	19,107.35
C. K. Lambert and J. A. Spicer, Okmulgee	.....	37,215.34
W. H. Livermore, Ins.,' Chickasha	.....	2,236.15
O. L. Lacy,*	.....	2,001.91
Laforce & Ferguson,* Limon, Colo.	.....	3,413.12
Miller Bros. 101 Ranch,* Marland	.....	17,662.48
Mountain Fork Oil Co., Okmulgee	.....	6,568.16
Frank & Murphy,* Tulsa	6,389.84	8,394.55
McCulloch Oil Co., Okmulgee	216,577.85	332.227.40
S. H. McKee,* Tonkawa	.....	4,940.45
Marland Employes Roy Co.,* Ponca City	.....	64,212.74
Alice Clark Myers,* Santa Fe, N. M.	.....	6,006.80
J. H. McBirney,* Tulsa	1,551.22	2,184.35
M. T. C. Oil & Gas Co., Tulsa	120,950.88	192,344.27
Magnolia Pet. Co., Dallas, Texas	47,940.31	66,543.76
Magnolia Pet. Co.,* Dallas, Texas	.....	9,442.91
Magnolia Pet. Co., Dallas Texas	2,968.79	4,392.19
Magnolia Pet. Co., Dallas, Texas	2,399.63	3,208.04
Magnolia Pet. Co.,* Dallas, Texas	.....	2,215.69
Magnolia Pet. Co.,* Dallas, Texas	2,020.77	2,653.05
Magnolia Pet. Co.,* Dallas Texas	2,020.79	2,653.05
Magnolia Pet. Co.,* Dallas, Texas	8,331.97	11,163.11
Magnolia Pet. Co.,* Dallas, Texas	2,819.04	3,757.18
Magnolia Pet. Co.,* Dallas, Texas	12,291.27	16,294.44
Magnolia Pet. Co.,* Dallas, Texas	3,567.84	4,760.27

Name. Address.	Bbls. of Oil	Value
Magnolia Pet. Co.,* Dallas, Texas	1,993.99	2,431.48
Magnolia Pet. Co.,* Dallas, Texas	3,566.05	4,533.86
Magnolia Pet. Co.,* Dallas, Texas	2,827.71	2,969.10
Magnolia Pet. Co.,* Dallas, Texas	6,848.62	28,518.75
Magnolia Pet. Co.,* Dallas, Texas	61,310.44	76,843.71
Magnolia Pet. Co., Dallas, Texas	3,322,434.22	4,296,503.51
Martindale, E. B.,* Muskogee	.....	2,267.85
Meridian Gas Co., Dallas	.....	18,596.12
I. R. McQueen, Trustee,* Oklahoma City	17,098.71	22,689.05
Midwest Gas Co., Tulsa	.....	14,192.46
D. A. McDougal,* Sapulpa	.....	2,473.74
W. F. McDaniels, Blackwell	.....	4,185.25
F. W. Merrick, Inc., Ardmore	.....	33,287.93
Annie Meyer,* Sapulpa	.....	4,589.63
Winnifred G. Mashburn,* Ardmore	1,783.72	2,157.27
Henry McDonald,* New York City	.....	3,507.03
R. J. Metcalf,* Fort Worth, Texas	4,046.51	5,551.48
Rosa and John Meier,* Winfield, Kan.	.....	2,527.75
Hulda Meier,* Enid	.....	2,527.75
C. L. McMahon, Tulsa	5,872.39	7,998.11
J. Read Moore,* Wewoka	.....	3,509.52
H. W. McVey,* Tulsa	.....	2,078.77
B. F. Melton,* Duncan	.....	3,677.38
Sarah J. Mahoney,* Tonkawa	.....	4,344.69
Mudge Oil Co., Pittsburgh, Pa.	19,285.21	20,249.97
L. W. Moody and Helen Moody, Exec.*, Shawnee	.....	5,897.87
Mid-Kansas Oil & Gas, Findlay, Ohio	230,214.74	309,800.99
Mid-Kansas Oil & Gas,* Findlay, Ohio	1,597.82	2,130.85
Mada McAlester, Holdenville	.....	2,939.76
M. T. C. Oil & Gas Co., Tulsa	25,642.24	35,578.43
L. J. McCune,* Tulsa	4,136.62	5,426.42
E. R. Minshall, Tulsa	6,430.95	8,719.68
McNeill & Harris, Wichita Falls, Texas	.....	10,251.47
Monarch Royalty Co.,* Kansas City, Mo.	.....	61,648.47
I. R. McQueen, Okla. City	.....	6,396.67
I. R. McQueen,* Okla. City	10,969.25	14,733.84
J. F. Murphy,* Sapulpa	.....	10,579.12
E. C. Mullendore, Cleveland	.....	34,128.25
E. C. Mullendore,* Cleveland	.....	3,522.67
Jennie Mullendore, Cleveland	.....	21,136.20
Jonas B. Milner,* Allen	.....	5,219.34
F. D. Misener, Tulsa	10,085.05	13,346.04
McMan Oil & Gas Co., Tulsa	72,197.04	103,225.59
McGraw Oil Co., Tulsa	35,671,09	33,934.00
J. H. Markham Jr., Tulsa	20,093.06	25,734.00
W. W. McDonough,* Wewoka	.....	7,932.65
F. W. Merick & Co. Trs., Ardmore	16,238.03	19,751.30
Mohan Oil Co., Tulsa	5,697.56	9,008.30
Mul-Berry Oil Co., Cushing	28,662.06	58,157.28
L. J. McNamara,* Seminole	.....	2,150.30
A. C. Inturff,* Morris	.....	4,006.23
J. H. Maxey,* Okla. City	.....	3,824.55
E. L. Mayes,* Earlsboro	.....	59,994.73
Million & Thomas,* McAlester	4,296.81	5,245.77
W. A. Merkley,* Brooklyn, N. Y.	.....	5,203.76
V. M. Marshall, Tulsa	41,243.21	56,465.51
Magee & Stipe, Electra, Texas	.....	5,161.05
Marileen Oil & Gas Co., Blackwell	9,915.94	13,434.60
D. B. Mason, Tulsa	.....	18,672.35
Eleanor W. McAdoo, Washington, D. C.	.....	2,297.87
Malernee Oil Co., Okla. City	.....	12,925.45
W. F. McMechan,* Tulsa	.....	2,164.33
C. F. Moseley, Bartlesville	.....	6,114.01
McMahon Royalties Co.,* San Antonio, Texas.	.....	5,291.04
C. L. McMahon & C. L. McMahon, Inc.,* Tulsa	.....	30,147.34
C. L. McMahon & C. L. McMahon, Inc., Tulsa	31,681.62	45,789.67
Geo. M. Mayhue,* Ada	.....	27,386.35
Margay Oil Corp., Tulsa	360,909.35	481,712.15
Mid-Continent Pet. Corp., Tulsa	1,571,226.17	2,099,552.50
Mid-Continent Pet. Corp.,* Tulsa	7,889.30	9,308.99
Mid-Continent Pet. Corp., Tulsa	.....	99,895.00
Dudley D. Morgan,* Tulsa	.....	3,762.51
Minnehoma Oil & Gas Co., Tulsa	192,789.81	282,043.25
Marcus W. McGuire,* Los Angeles, Cal.	.....	24,775.35
Marcus W. McGuire,* Los Angeles	.....	4,071.75
Marcus W. McGuire,* Los Angeles, Cal.	.....	3,667.51
J. M. MacDonough,* New York City	.....	5,728.29
Clint Moore, Estate, Tulsa	.....	20,367.23
E. H. Moore,* Tulsa	1,843.31	3,180.98
Mt. State Oil Co., Bartlesville	.....	24,990.57
Marland Oil Co., Ponca City	.....	56,641.31
Marland Oil Co., Ponca City	593,422.16	817,826.22
W. C. McBride, Inc.,* St. Louis, Mo.	.....	5,196.40
S. R. Meally,* Tulsa	.....	35,653.48
National Union & Gas Co., Blackwell	4,554.25	7,606.99
F. M. Nelson, New York City	6,563.93	8,088.68
Nester Oil Co.,* Alex	3,826.45	5,434.13
Norwood Oil Co., Tulsa	8,378.36	10,268.74
Nowata Oil & Ref. Co., Tulsa	.....	11,895.38
Spencer Norvell,* Wewoka	.....	2,369.78
A. S. Norvell,* Wewoka	.....	10,758.54
Mrs. Hattie Noble,* Ardmore	.....	3,817.42
Mrs. Eva E. Noble,* Ardmore	.....	5,089.90
Chas. F. Noble, Tulsa	.....	5,081.89
Jas. A. Novotney Est.,* Tonkawa	.....	7,132.83
R. B. North,* Blackwell	.....	5,107.45

Name. Address.	Bbls. of Oil	Value
W. A. Norton,* Amaret, Mo.	1,577.55	2,585.89
Walter Newstadt, Ardmore	5,280.13	6,760.62
New Royalty Co.,* Ponca City	3,346.00	5,015.52
W. C. Norris, Tulsa	.....	14,599.73
Nowata Oil & Ref. Co., Tulsa	.....	11,895.00
Noble Oil & Gas Co., Tulsa	3,193.34	4,061.28
North Central Texas Oil Co. Inc., N. Y. City	.....	7,168.78
G. A. Nichols,* Okla. City	.....	5,028.43
R. L. Nelson,* Tonkawa	.....	4,518.88
Errett R. Newby,* Okla. City	.....	2,015.96
John E. Neelly,* Tulsa	1,723.07	2,459.50
New York Pet. Royalty Corp., N. Y. City	4,470.21	5,624.76
National Oil & Dev. Co., Tulsa	7,384.29	8,381.88
S. S. Orwig,* Wewoka	.....	41,348.63
Osage Development Co., Bartlesville	5,329.53	6,601.17
Oil State Pet. Co., Enid	9,081.39	13,379.56
Oil State Pet. Co.,* Enid	14,311.54	19,376.74
Osage Gas Prod. Co., Independence, Kansas	373.70	76,178.08
Olean Pet. Co., Bristow	.....	19,263.14
Okla. Gas Utilities Co., Chickasha	.....	44,017.71
Omega Oil Corp.,* Shreveport, La.	.....	4,581.78
Ollie B. O'Dell,* Richmond, Calif.	.....	26,116.06
Okla. Natural Gas Corp., Tulsa	.....	66,165.00
Ona Oil Co., Blackwell	8,982.64	28,571.32
W. B. Osborn,* Ada	.....	5,804.02
Mary Severs Owen,* Muskogee	.....	3,866.66
J. M. O'Neal,* Tecumseh	.....	2,013.02
August Rust Openheim,* New York City	.....	49,608.24
Osage Syndicate Inc., Tulsa	4,224.14	5,405.52
Oklahoma Co., Philadelphia, Pa.	.....	5,853.75
Ohio Royalty Co.,* Tulsa	.....	9,654.11
A. G. Oliphant, Tulsa	30,663.22	36,325.15
Ohio Fuel Oil Co.,* Charleston, W. Va.	18,632.13	24,083.01
Ona G. Owen, Okla. City	.....	2,576.61
Pure Oil Co., Chicago, Ill.	.....	107,400.33
Pure Oil Co., Chicago, Ill.	1,948,777.60	2,604,458.18
Producers & Ref. Corp., Denver, Colo.	119,392.30	84,746.67
Producers & Ref. Corp., Denver, Colo.	.....	8,129.05
Philmack Co., Tulsa	79,909.47	112,724.92
W. G. Phillips & J. B. Milam, Chelsea	21,718.54	27,273.79
Phillips Pet. Co., Bartlesville	786,810.74	1,201,244.88
Prairie Oil & Gas, Independence, Kan.	3,612,045.62	4,791,092.65
Prairie Oil & Gas, Independence, Kan.	.....	166,559.65
W. B. Pine, Okmulgee	32,854.76	56,704.60
W. B. Pine & Phillips Pet. Co., Okmulgee	6,344.16	8,754.96
Peters Pet. Corp., Tulsa	82,116.99	106,422.14
Peerless Oil Producing Co., Tulsa	29,309.83	45,194.58
Paraffine Oil Co., Houston, Texas	8,450.28	10,333.83
Pierce Pet. Corp., San Springs	35,214.14	44,158.62
Pierce Pet. Corp., Sand Springs	13,332.91	16,824.21
Pierce Pet. Corp., Sand Springs	.....	8,401.30
Pierce Pet. Corp., Sand Springs	.....	441.33
Pierce Pet. Corp., Sand Springs	.....	5,188.75
Rosa M. Phillips,* Davis	21,423.85	26,865.30
Papoose Oil Co., Tulsa	7,428.52	11,789.57
J. A. Patterson,* Wewoka	2,095.60	2,781.31
Pawhuska Oil & Gas Co., Pawhuska	.....	10,497.70
B. R. Peddycoart,* Duncan	.....	3,675.47
Henry Permitter,* Earlsboro	.....	5,863.40
Mable Dale Potts,* Yale	.....	6,313.04
Ed Parker, Wewoka	2,682.45	3,460.59
C. J. Perry,* Shawnee	.....	2,197.14
J. A. Pringle trustee for Fox Royalty Co.	.....	7,744.17
O. J. Pharoah,* Henryetta	.....	8,382.95
Quinton Spelter Co., Quinton	.....	8,609.34
Quinton Relief Oil & Gas, Quinton	.....	10,804.33
John Quimby,* Montebello, Calif.	6,584.05	8,758.84
A. E. Quinnett,* Shawnee	.....	2,484.23
Roxana Pet. Corp., St. Louis, Mo.	.....	53,423.11
Roxana Pet. Corp., St. Louis, Mo.	1,178,067.66	1,566,076.02
Isabelle S. Reed,* Neosho, Mo.	57,444.97	78,705.16
Frank H. Reed,* Neosho, Mo.	57,444.97	97,038.34
E. L. Robinson, Tulsa	6,718.73	8,955.35
E. L. Robinson, Tulsa	5,754.70	7,709.33
E. L. Robinson, Gibson & Zahniser, Tulsa	3,432.12	6,554.06
Thos. C. Roberts, Ardmore	6,757.47	9,816.10
Thos. C. Roberts,* Ardmore	1,843.90	2,273.49
Ryan Con. Pet. Corp., Bartlesville	7,794.87	10,419.16
B. H. Robertson and H. W. Reed,* Nowata	.....	6,145.45
Red Bank Oil Co., Tulsa	14,036.39	18,660.74
Royalty Inv. Syndicate,* New York City	.....	13,942.46
Jacob Ruppert,* New York City	.....	3,270.85
M. L. Roscoe,* Tulsa	.....	17,426.56
Reed & Harmon, Nowata	6,877.85	7,289.59
Riverside Oil & Ref. Co., Tulsa (1924, 1925, 1926 and 1927 Reports combined).	176,154.46	344,342.76
Riverside Oil & Ref. Co., Tulsa	51,033.10	101,520.95
Riverside Oil & Ref. Co., Tulsa	216,543.34	436,986.47
Riverland Co.,* Tulsa	.....	5,763.06
Riverland Co., Tulsa	130,727.06	190,396.45
W. R. & W. E. Ramsey, Okla. City	.....	162,570.42
Geo. D. Roberts, Tulsa	.....	18,305.00
Joe Ray,* Bradley	7,233.43	8,724.07
Joe Ray, Bradley	.....	7,072.56
Max Rippy, Shawnee	.....	3,801.65
C. L. Richards,* Tulsa	.....	8,246.91
Richard J. Roberts,* Wewoka	.....	17,079.72
J. W. Robins, Ft. Worth	12,271.62	14,245.64
Robert M. Rainey,* Okla. City	.....	3,084.26
Dack Ramsey,* Ripley	.....	8,425.98
C. E. Rath, Independence, Kans.	4,858.58	6,158.43
W. S. Randall, Okla. City	8,631.92	9,361.71
Frank Reed,* Seminole	.....	2,902.46
Rex Oil & Gas Co., Winchester, Ky.	6,282.12	7,674.01
Reliance Oil Co., Houston, Texas	4,735.40	8,287.98
Reliance Oil Co., Houston, Texas	3,701.73	4,466.05
Rena Ray Co., Tulsa	.....	15,338.18
Eulahmae Reed,* Wewoka	.....	7,804.79
Regal Oil & Gas Co., Tulsa	.....	15,647.79
Replogle & Johnston,* Okla. City	.....	6,281.79
L. D. Rickey,* Ardmore	2,560.13	3,157.09
H. T. Riddle,* Seminole	.....	4,453.90
Mabel Ringling,* Ardmore	.....	2,528.60
Leonard C. Ritts,* Tulsa	1,755.44	2,478.57
Richard & Roberts and Jos. C. Looney,* Wewoka	.....	2,646.74
Rockland Oil Co., Ardmore	.....	39,578.00
Roy Oil Co.,* Alex	.....	4,825.86
J. A. Rockwell,* Warren, Pa.	.....	26,940.17
Reiter-Foster Oil Corp., Tulsa	.....	7,158.57
Rubana Oil Co., Sayre	55.66	6,153.14
Dora C. Russell,* Duncan	.....	3,626.72
Selby Oil & Gas Co., Tulsa	38,567.33	45,591.82
Selby Oil & Gas Co.,* Tulsa	.....	3,505.35
Sidwell Drilling Co., Sapulpa	5,860.22	7,670.29
J. R. Simpson Exec.,* Seminole	.....	13,998.29
C. B. Shaffer, Chicago, Ill.	14,780.56	17,587.17
L. O. Sparks, Admr. of Samuel Gilbert estate,* Oklahoma City	.....	41,851.36
Harriett Sparks,* Earlsboro	.....	18,881.10
G. J. Smith,* Tulsa	.....	12,839.00
C. E. Sykes,* Ardmore	.....	3,072.39
G. J. Smith,* Tulsa	7,237.69	9,828.52
Mary & Gus Swenson,* Arkansas City, Kan.	.....	2,647.60
Clyde and W. D. Seay,* Oscar	2,136.00	2,679.36
J. T. & Margaret Stubblefield,* Holdenville	.....	23,636.89
Anna Sukovaty,* Bristow	.....	2,190.88
Peter Sukovaty,* Bristow	.....	2,190.88
Jack Summer,* Muskogee	.....	2,878.30
Chas. A. Snyder,* Sapulpa	.....	2,428.57
Morris Schonwald,* Tonkawa	.....	5,820.81
Sarasota Oil Co.,* Ardmore	4,792.97	5,617.97
South Bend Oil Corp., Tulsa	.....	13,560.42
Sheldon Oil Co., Tulsa	.....	6,086.34
John Smith,* Wetumka	1,688.30	2,279.54
H. E. Schmidt,* Columbus, Ohio	4,650.86	6,634.77
Arlie E. Strough,* Davenport	.....	3,017.47
Mrs. Geo. Summers,* Tonkawa	.....	3,119.01
F. A. Shellenberger,* Marietta	.....	2,007.76
Est of L. K. Skelton, Okmulgee	1,714.93	5,512.03
M. R. Stone Trustee,* Hawarden, Ia.	3,241.75	3,501.64
Ira Shimp,* Dilworth	.....	7,092.07
O. B. Surber,* Chickasha	.....	2,836.50
John H. Standridge,* Lexington	.....	4,977.18
H. J. Spaugy,* Trousdale	.....	3,677.96
R. A. Steinpfad,* Shawnee	.....	12,562.71
L. L. Sturgeon,* Wewoka	.....	4,205.80
R. S. Shade, Tulsa	.....	15,492.01
Marie A. Sharum,* Ripley	.....	3,074.07
B. E. Sharum,* Ripley	.....	5,742.00
Robert C. Sharp, Tulsa	7,908.40	10,574.40
Clyde Stewart,* McAlester	.....	2,319.41
H. E. Smith,* Rush Springs	.....	2,309.39
Sheridan Oil Co., Tulsa	17,118.33	25,629.69
Superior Oil Corp., Tulsa	105,469.78	151,526.58
Seneca Royalties Co.,* Oklahoma City	1,889.96	2,736.72
M. F. Steil,* Tulsa	.....	2,164.58
R. Sneed,* Tulsa	.....	2,171.50
Simms Oil Co., Dallas, Texas	18,716.34	26,199.68
Amanda Schumacher,* Orange, Cal.	.....	2,514.45
Dr. H. Sulzberger,* New York City	.....	10,682.76
Schermerhorn Oil Co., Tulsa	4,645.04	12,055.83
Simpson Fell Oil Co., Ardmore	34,111.71	41,896.16
L. O. Shannon,* Stillwater	.....	6,568.57
Skelton-Moore Oil Co., Bartlesville	6,099.47	7,625.00
Sinclair Oil & Gas Co., Tulsa	3,289,676.24	4,482,843.05
Sinclair Oil & Gas Co., Tulsa	.....	136,205.33
W. E. Simpson,* St. Louis, Mo.	2,158.07	2,871.19
A. O. Simpson,* Ardmore	2,158.07	2,871.19
O. W. Seay,* Ryan	.....	13,286.19
Snowden & McSweeney Co., New York City	22,482.24	28,510.00
Skelly Oil Co., Tulsa	730,399.03	950,783.28
W. G. Skelly, Tulsa	4,558.85	5,411.58
Skelly Oil Co.,* Tulsa	.....	5,674.14
Skelly Oil Co., Tulsa	.....	67,770.79
Skelly Oil Co., Tulsa	.....	1,634.82
Tom Slick, Inc.,* Oklahoma City	29,290.38	38,842.35
Tom Slick, Inc., Oklahoma City	354,527.81	521,810.39
T. B. Slick, Clarion, Pa.	255,003.76	370,961.87
T. B. Slick, Clarion, Pa.	38,819.92	30,737.06
J. B. Schermerhorn, Inc.,* Minneapolis, Minn.	.....	3,825.08
J. B. Schermerhorn, Inc., Minneapolis, Minn.	81,941.17	101,497.82

Name. Address.	Bbls. of Oil	Value
Schermerhorn-Ardmore Co., Minneapolis, Minn.	79,435.14	95,425.02
Sunrise Oil Corp.,* Oklahoma City	.....	16,830.33
Southwest Producing Co., Bristow	.....	17,433.93
J. K. D. Shaffer,* Oklahoma City	.....	3,554.72
Shaffer Oil & Ref. Co., Tulsa	312,971.82	495,109.58
Shaffer Oil & Ref. Co., Tulsa	.....	35,443.08
H. F. Sinclair,* New York City	.....	10,903.48
Sinclair Oil & Gas Co., Tulsa	.....	136,205.33
Savoy Oil Co., Tulsa	14,272.49	17,374.42
Savoy Oil Co., Tulsa	.....	18,726.02
Sterling Oil & Gas Co., Abilene, Texas	.....	19,388.25
Sure Oil Corp., Tulsa	4,398.65	5,968.39
Sun Royalty Co.,* Tulsa	33,698.74	43,573.78
Sunray Oil Co., Tulsa	25,257.57	39,858.21
Sapulpa Ref. Co., Denver, Colo.	25,690.60	35,412.10
Shutzer Bros., Dewey	5,316.70	6,260.52
C. C. & C. E. Snellings, Shawnee	.....	3,407.42
Lucy B. Scott,* Holdenville	.....	2,934.21
O. C. Sparks,* Ardmore	.....	2,990.28
J. F. and Florence Swoop,* Oilton	.....	2,307.33
Edwin Sandford, Oklahoma City	.....	2,793.50
Dave Schonwald,* Blackwell	.....	7,446.10
T. J. Spencer,* Wewoka	.....	2,930.99
T. J. Spencer, Wewoka	.....	29,068.04
Logan Stephenson,* Okemah	.....	2,529.57
Seminole Oil Co.,* Tulsa	.....	18,792.20
O. D. Strothers, Tulsa	17,563.98	23,145.63
O. D. Strothers, Tulsa	.....	23,432.97
Gracie I. Shirley,* Tulsa	.....	2,315.53
M. T. Smith & Son, Oklahoma City	7,847.20	8,510.63
I. D. Simons, Tulsa	.....	7,214.95
Spring Oil Co., Independence, Kan.	3,895.03	5,023.37
C. R. Smith Estate, Ardmore	28,952.77	47,049.75
Mrs. Bettie Simon,* Oklahoma City	.....	2,142.19
James A. Swindler, Muskogee	7,113.38	9,574.89
Alice and T. J. Spencer,* Wewoka	.....	29,068.04
Harry Stekoll, Tulsa	4,185.72	5,255.54
E. D. Slough,* Ardmore	.....	6,003.92
C. H. Schoenfeld and J. H. Markham, Jr. Tulsa	2,280.07	3,007.05
Fred & Willard Sowards, Stroud	.....	3,061.99
Smith & Stinberger, Tulsa	1,534.94	4,067.95
N. Bert Smith,* Oklahoma City	.....	6,045.03
Walter Schroeder,* Enid	.....	2,527.75
M. H. Schroeder, Enid	.....	2,527.75
Oscar Schroeder,* Enid	.....	2,527.75
Henry Schroeder,* Enid	.....	2,527.75
Paul Schroeder,* Enid	.....	2,527.75
Caroline Schroeder,* Enid	.....	2,527.75
Vida M. Tull,* Yale	.....	11,910.84
C. G. Tibbens, Tulsa	.....	45,860.62
Turman Oil Co., Tulsa	5,607.77	7,107.93
Turman Oil Co., Tulsa	142,815.07	227,122.51
J. F. Tams,* New York City	.....	2,258.49
Blanche E. S. Tams,* New York City	.....	2,148.31
Tiger Pet. Corp., Tulsa	9,155.34	11,615.46
R. H. Todd,* Wewoka	.....	2,378.98
Roy B. Thompson,* Tulsa	.....	6,707.97
W. M. Thompson,* Tulsa	.....	6,832.21
Martha Nadine Tully,* Muskogee	.....	2,394.02
Hazel B. Thomas,* Norge	.....	2,061.71
Twin State Oil Co.,* Tulsa	32,899.88	44,701.04
Twin State Oil Co., Tulsa	987,192.76	1,185,712.67
Texas Co. Producing Dept., Tulsa	2,256,933.21	2,991,088.78
Texas Co., Producing Dept., Tulsa	.....	87,300.14
Texas Co. Producing Dept., Tulsa	.....	23,846.77
Tidal Osage Oil Co., Tulsa	.....	13,660.10
Tidal Osage Oil Co., Tulsa	473,977.54	627,908.26
Dr. Joseph C. Taylor,* New York City	.....	4,747.16
Partners of Tidal Oil Co., Tulsa	7,514.01	9,085.96
Tidal Oil Co., Tulsa	6,950.16	8,327.05
Tidal Oil Co.,* Tulsa	11,662.37	14,469.64
Tidal Oil Co., Tulsa	731,918.72	940,241.37
Tidal Oil Co., Tulsa	.....	32,774.98
K. B. Turner,* Eufaula	.....	2,080.08
A. M. Thomas,* Tonkawa	.....	3,856.24
Bessie Turman, Okmulgee	51,068.57	70,488.89
David P. Thornton,* Muskogee	.....	2,691.36
Texas Pacific Coal & Oil Co., Thurber, Texas	109,937.18	118,951.70
Tedray Corporation, Tulsa	.....	9,577.57
Thlocco Oil Co., Tulsa	11,573.78	16,368.37
F. E. Tucker,* Ardmore	1,913.49	2,415.79
J. N. Thompson,* Tulsa	1,356.44	1,979.86
S. F. Thompson,* Okemah	.....	4,946.31
Transcontinental Oil Co., Tulsa	112,558.74	153,518.39
Thompson & Black, Inc., Tulsa	.....	13,823.29
M. E. Templeton,* Phoenix, Ariz.	.....	67,374.56
A. H. Taylor,* Shawnee	.....	3,488.73
T. A. Thurmond, Ardmore	2,381.54	5,132.18
Thompson Oil & Gas Co., Tulsa	4,536.84	5,932.45
Thornton Securities Corp.,* Wellsville, N. Y.	.....	2,081.57
R. P. Traugh,* Wewoka	.....	3,023.46
F. E. Tucker,* Ardmore	1,913.49	2,415.79
W. L. Umburn,* Weleetka	.....	7,928.93
United Producing Co.,* Charleston, West Va.	.....	3,929.30
C. F. Urschel, Oklahoma City	.....	6,544.86
Mrs. Flored S. Urschel, Oklahoma	4,470.49	6,544.86
United Eight Oil Trust, Madill	10,331.37	13,858.70

Name. Address.	Bbls. of Oil	Value
Union Oil and Mining Co., Tulsa	4,486.94	6,115.00
Rachel Ungerman, Kansas City, Mo.	.....	9,822.59
J. B. Umpleby,* Oklahoma City	1,937.30	2,742.87
A. B. & Marcus Unger, Muskogee	.....	11,010.03
A. B. & Marcus Unger, Muskogee	.....	19,940.32
Valley Osage Oil Co., Tulsa	20,653.37	25,647.06
Vernon Oil Co., Blackwell	10,810.23	18,938.57
S. K. Vierson,* Okmulgee	4,826.52	6,406.67
S. K. Vierson,* Okmulgee	12,277.32	16,386.33
Vierson Oil and Gas Co., Okmulgee	1,149.23	2,605.20
Vierson Oil and Gas Co.,* Okmulgee	9,547.70	12,942.85
Leon G. Vorhees,* Oklahoma City	18,127.82	23,198.34
W. F. Varnum,* Shawnee	.....	17,681.74
S. E. Vance,* Tulsa	2,497.83	3,901.13
Amanda Vassar,* Tulsa	.....	3,416.25
R. E. Voyes, Pawhuska	.....	7,170.60
L. H. Wentz Oil Division, Ponca City	223,195.71	317,285.60
Westheimer & Daube,* Ardmore	.....	18,454.10
Westheimer & Daube, Ardmore	90,752.00	146,466.52
Warner Caldwell Oil Co., Titusville, Pa.	24,524.36	31,969.53
W. S. Wilcox,* Garber	.....	2,246.76
H. F. Wilson Oil and Gas, Tulsa	528,280.51	697,185.78
H. F. Wilson Oil and Gas, Tulsa	2,110.24	2,841.13
K. C. Woolery,* Dallas, Texas	21,242.98	28,324.40
K. C. Wooley,* Dallas, Texas	.....	2,256.92
Wolverine Pet. Corp., St. Louis, Mo.	.....	18,230.33
Wolverine Pet. Corp., St. Louis, Mo.	9,079.58	253,832.56
Westland Oil Corp., Tulsa	22,713.90	31,159.16
Winona Oil Co. of Delaware, Tulsa	43,629.68	83,916.62
Washington Royalty Co.,* Bartlesville	7,838.11	11,772.61
White Eagle Oil & Ref. Co., Wichita, Kansas	40,095.44	54,319.27
White Eagle Oil & Ref. Co., Wichita, Kansas	.....	5,162.38
Westervelt, Noble Oil & Gas Co., Okla. City	.....	12,326.21
W. T. Hales, Oklahoma City	56,519.69	72,834.84
W. T. Hales,* Oklahoma City	4,595.37	6,082.26
E. W. Whitney,* Wewoka	.....	44,148.38
Wiser Oil Co., Bartlesville	85,567.02	105,015.81
Whitehill Oil Corp., Tulsa	6,516.70	8,270.92
Whitehill Oil Corp., Tulsa	1,527.75	2,512.26
J. H. Wright, Sapulpa	.....	27,524.12
J. H. Wright, Sapulpa	.....	14,420.48
Archie K. Wright,* Muskogee	.....	3,530.99
Irwin L. Wilson,* Wewoka	.....	6,037.87
Jessie Mae Wilson,* Shawnee	.....	30,416.38
W. M. White,* Alex	.....	2,681.02
C. D. Williams,* Ardmore	.....	2,447.62
E. A. Walker,* Oklahoma City	.....	30,560.79
Wrightsman Pet. Co.,* Tulsa	2,399.89	2,969.47
James H. Wilkins,* Shawnee	.....	2,069.50
Fred A. Wilson,* Ponca City	.....	2,357.59
James Wood,* New York City	.....	3,058.13
W. E. Woods,* Cox City, Okla.	.....	6,192.09
Wood Oil Co., Tulsa	.....	13,404.67
Roy Wood,* Oklahoma City	.....	10,705.50
J. B. Wasson,* Cleveland	.....	5,530.09
Louis Windler,* Enid	.....	2,229.84
Ruth Welsh,* Blackwell	2,217.88	3,060.67
J. L. Welsh,* Blackwell	.....	3,324.74
James Wright,* Bristow	.....	7,527.17
C. W. Wilson, Okmulgee	.....	6,216.55
A. J. Whitfield, Sapulpa	.....	12,185.71
Ward Oil and Gas, Tulsa	6,924.40	8,436.85
Westerly Oil Co., Bartlesville	4,111.70	5,500.92
H. E. Williams, Muskogee	.....	6,843.81
Wittmer Oil & Gas Properties, Pittsburgh, Pa.	5,996.71	8,471.22
Wilhelmina Worley,* Tulsa	.....	9,615.36
Wigton & Long Co., Okmulgee	.....	12,490.55
J. E. Wallace, Okmulgee	.....	8,927.78
Wolfe Oil Corp., Bristow	.....	9,031.03
Wellsville Oil Co. et al, Wellsville, N. Y.	7,032.17	8,738.90
C. W. Wolcott, Gdn.* Coweta	.....	4,280.54
J. M. Winters,* Alma	.....	5,716.14
Western Royalty Co.,* Tulsa	3,657.33	4,789.97
Flossie E. Wilcox,* Melrose Park, Ill.	.....	30,416.38
C. M. Wolford,* Rush Springs	.....	6,512.99
Ollie A. & C. W. Wilson,* Okmulgee	.....	2,249.28
Wah-Shah-She Oil Co., Bartlesville	3,932.67	5,115.51
L. W. Wilson,* Okmulgee	.....	3,047.85
Walsh Oil Co., Tulsa	6,304.33	7,794.49
Benton Wilson,* Greenfield, Mo.	.....	5,033.78
J. L. Waltman,* Cushing	.....	6,226.88
W. A. Webb,* Allen	.....	2,713.48
John W. Willmott,* San Diego, Calif.	.....	31,530.16
C. O. White,* Okemah	.....	9,478.63
Louis H. Walker,* Indio, Calif.	.....	2,178.96
L. V. Whitworth & C. C. Lock,* Wewoka	.....	2,229.47
Winkler & McQueen, Inc., Duncan	5,660.90	23,349.18
J. B. Yount,* Wichita, Kansas	.....	2,719.23
Etta A. Yoakum,* Allen	3,594.39	4,295.68
L. W. Young,* Wewoka	.....	2,931.76
York Oil & Gas Co.* Muskogee	.....	5,671.86
J. Wright Young,* Broken Arrow	1,769.52	2,304.42
J. S. Zeiser, Los Angeles	6,938.72	8,398.61
Effie M. Zollars,* Lincoln, Ill.	.....	2,269.07
Zola Oil Co., Tulsa	16,344.16	20,097.78
L. W. Zimmerman, Chicago	37,013.93	44,808.23

Maurice Hirsch & Ben J. Brown
ATTORNEYS AT LAW
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HOUSTON, TEXAS
Specializing in Oil Law and Land Law

PATENTS
Patents Obtained, Trade Marks, Patent Causes
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Formerly Assistant Examiner United States Patent Office
Andrews, Streetman, Logue & Mobley
12th Floor Union N. Bk., Houston, Tex

PHILLIP MAVERICK
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A
Tret-O-lite
Plant
is NOT expensive

Operators usually can arrange a Tret-O-LitE plant, using equipment already on the lease. No heavy initial investment—no expensive equipment to stand idle when need for large treating capacity has passed.

The Tret-O-litE method is the fast, economical and THOROUGH method of recovering oil from emulsions.

WM. S. BARNICKEL & COMPANY
St. Louis, Mo.

Tret-O-litE

NEW NORVELL-WILDER HEADQUARTERS AT BEAUMONT

Norvell - Wilder Moves Into New Building

Beaumont, Texas. — Norvell-Wilder Hardware Company, of this city, a concern which specializes in oil field field equipment, has recently completed a new headquarters building.

The building is a one-story structure except for office space which is over the front part of the store. Dimensions are 155 by 220 feet. Construction is of steel, brick and concrete, making the building fireproof.

The site is located on the K. C. S. Railroad and trackage is available the full length of the building.

The company operates branch stores at Houston, Shreveport and Fort Worth.

Officers of the company include E. W. Gildard, president and general manager; Autrey M. Greer, secretary, and A. H. Schultz, treasurer.

JOHN F. WEINZIERL
CONSULTING GEOLOGIST
ADVISOR ON GEOPHYSICAL INSTRUMENTS
619 Petroleum Bldg., Houston, Texas

THE FT. WORTH LABORATORIES
Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Sell Thermometers, Hydrometers and Laboratory Glassware
F. B. Porter, B. S., Ch. E., Pres
R. H. Fash, B. S., Vice-President
828½ Monroe St. Ft. Worth, Tex.

HEYDRICK'S NEW MAPS
WEST TEXAS
County Maps
Combination Maps
Descriptions and prices on application.
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas.

Alco Opens New Plant in California

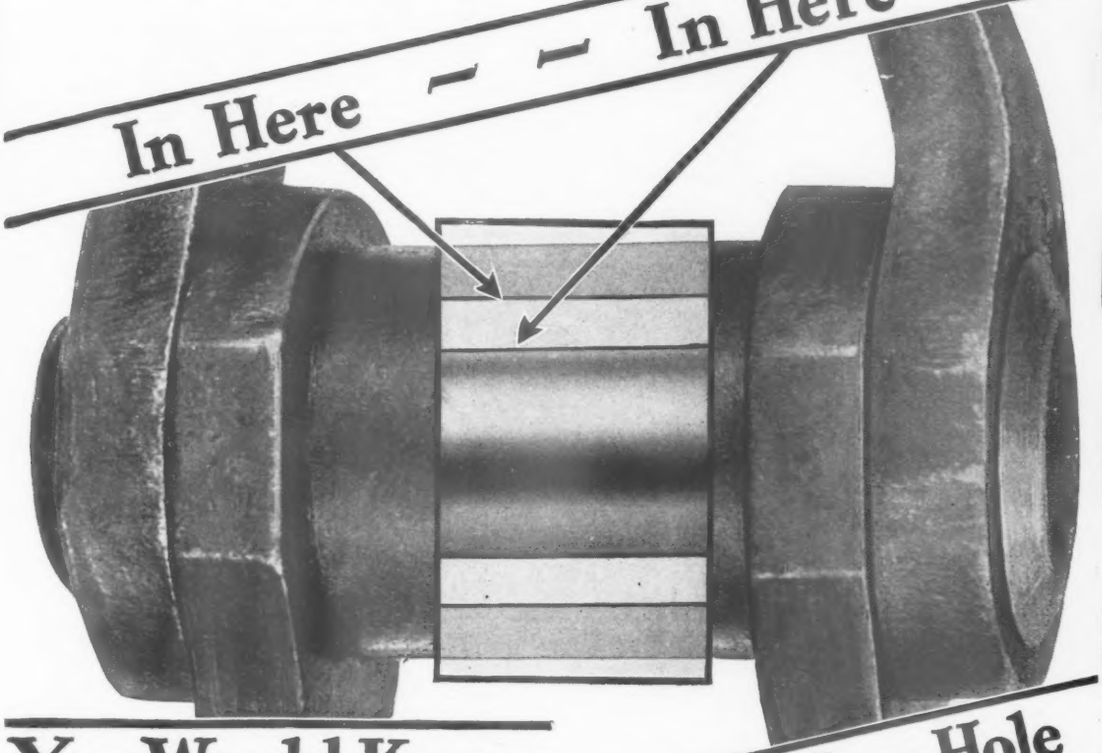
Compton, California—The Alco Oil Tool Company, with headquarters here recently opened a new plant and office building.

The new plant consists of a two-story office building 20 by 60 feet and a modern steel building 60 by 176 feet the total area of which is 60 by 196 feet exclusive of the welding shop which is housed in the old building. The plant is completely equipped with lathes, shapers, punch presses, drilling machines and grinders In the old building the welding shop and heat treating plant are housed and all grinding, gauging and heat treating are done there. The office is built of stucco with tile facing and iron grill work which is so representative of Southern California construction.

The personnel of the company consists of four Allen brothers: Hubert Allen, Albert Allen, F. D. Allen, who is sales manager, and W. C. (Clark) Allen, who is the engineer. F. J. Perry is secretary and auditor.

The
BELLEVUE-STRATFORD
PHILADELPHIA
The choice of discriminating Philadelphians and particular travelers
Famous for its courteous service and homelike environment
Centrally Located
BROAD at WALNUT
J. M. ROBINSON, Manager
Affiliated Hotels
WALDORF-ASTORIA New York
NEW WILLARD Washington, D.C.

If You Could See



You Would Know

Why Rex Deep Well Makes More Hole

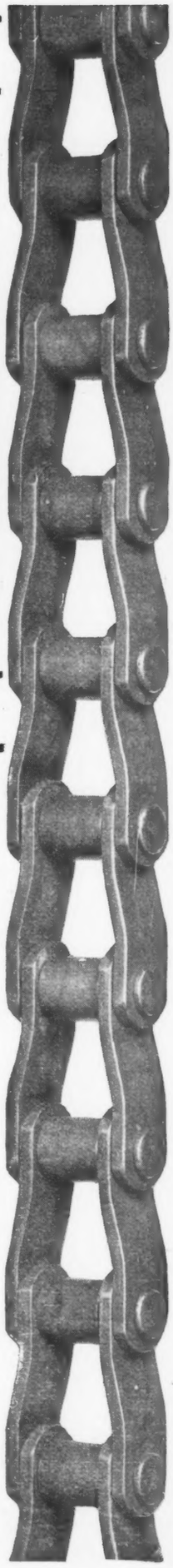
Rex Chabelco 1030 D. W. 3 is an A. P. I. No. 3 chain

Rex Chabelco 1240 D. W. 4 is an A. P. I. No. 4 chain

The tensile strength of 1030 D. W. 3 is 40,000 pounds

The tensile strength of 1240 D. W. 4 is 85,000 pounds

If you could see inside the new Rex Deepwell Chabelco, while the rig was drilling, you would see why the chain gives longer life. You would see that its ground pins, ground bushings and the seamless roller fit so closely that there is no excess play, run so smoothly that there is but little wear, and that each one resists wear equally and does not grind the others. Rex Deepwell Chabelco 1030 D. W. 3 and 1240 D. W. 4 is stocked in all active oil fields.



CHAIN BELT COMPANY, 739 Park St., Milwaukee, Wis.

1000 Keystone Bldg.
Houston, Texas

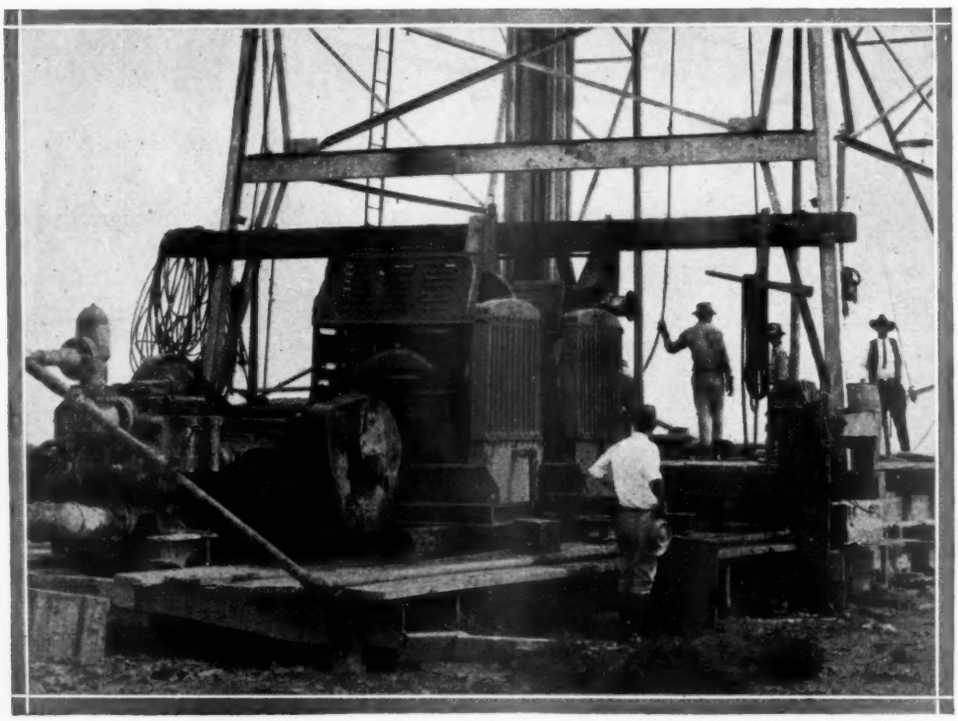
REX
Reg. U. S. Pat. Off.

1414 Santa Fe Ave.
Los Angeles, Calif.

CHABELCO

Say you saw it in The OIL WEEKLY

Typical Waukesha-Powered Rotary Rig in Texas



P-748-L

Doubling Up

Two 125 H.P. Waukesha "Ricardo Head" Heavy-Duty Oil Field Power Units make an ideal combination for rotary rigs—one on the mud pump, the other on the rotary or both on the draw works. In this manner they are widely used along the Gulf Coast and in West Texas. Using little water and running on easily portable fuel—gasoline or "waste" gas—they are particularly adapted to both "wild cat" drilling or producing fields where water is scarce and fuel dear.

Waukesha Oil Field Power Units are built in sizes from 40 to 125 H. P. For stationary work where a complete weather-proofed unit is not required Oil Field Stationary Units with unusually large radiators are available in sizes from 70 to 125 H.P. Waukesha power is used for drilling with either rotary or cable tools; for pumping water, oil and mud and for driving "Gas Lift" compressors. If you are interested in the "Gas Lift" write for Bulletin 616 which gives the entire theory and practice of this kind of pumping.

P-810-L

OIL INDUSTRY EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

New York	Tulsa	Houston	San Francisco
8 W. 40th St.	C. F. Camp Co.	Portable Rig Co.	C. A. Watts

Exclusive Builders of Heavy Duty Gasoline Engines for Over Twenty Years

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Portable Engine House

INTERNATIONAL DERRICK AND EQUIPMENT COMPANY

International Derrick and Equipment Company, Columbus, Ohio, announces a new type of sectional belt and engine house for oil country use. These are light portable structures, made in standard sizes and adaptable to all makes of steel or wooden rigs.

The buildings are adequately flashed and are made with either galvanized or painted frames.

Special features include a number of items: The 26 gauge galvanized sheeting is permanently fastened to the sectional roof and sidewall panels.

Corners, sidewall joints and eaves of roofs are so constructed as to make weather tight connections, eliminating extra flashings.

The water shed of the belt house drains away from the front walk and the derrick floor.

A tight fitting adjustable panel is provided on the belt houses to permit installation or removal of the sand reel which closes the house when the reel is in place or removed.

A special panel to accommodate the crank is provided. This keeps this opening closed and permits the belt houses to be erected or dismantled without interfering with the machinery support or machinery.

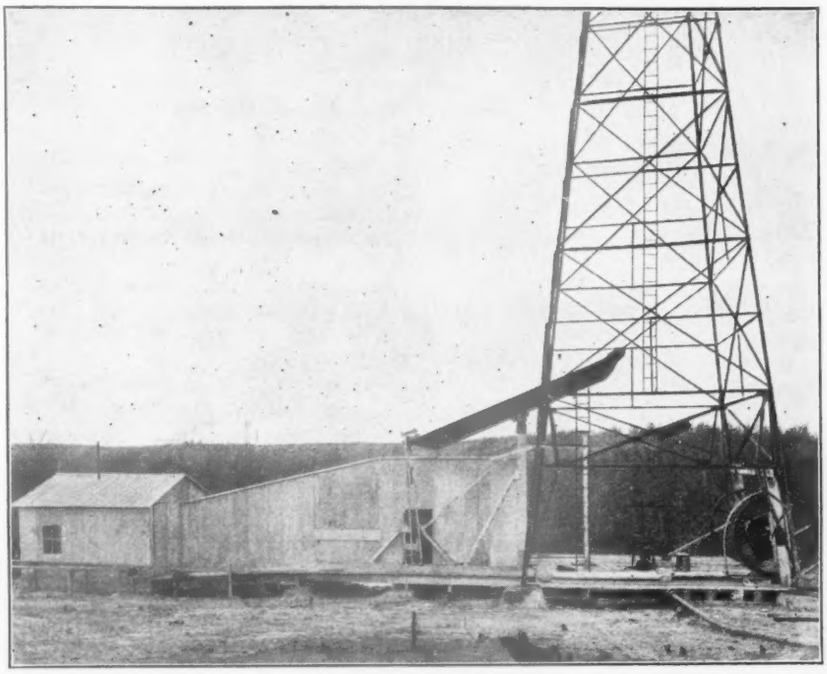
Through the use of various size panels the belt houses can be adjusted for use with belt centers from 34 to 42 feet.

Eaves on the engine houses are eight feet high.

The engine houses are offset two feet toward the back side of the rigs to provide a passage and working space between the wall and engine.

Additional information is obtainable from the company, by request.

Lorimer Dunlevy has resigned his position as sales manager for the Climax Engineering Company, Clinton, Iowa, effective March 15.



PORTABLE ENGINE HOUSE

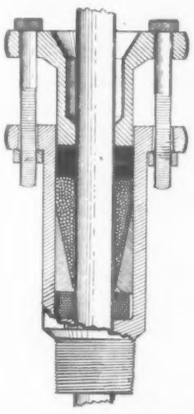
McInnes Products

THE McINNES CORPORATION

The McInnes Corporation, 321 East Third Street, Tulsa, Oklahoma, is marketing two new products of interest to oil producers.

The Shot Packed Stuffing Box is recommended for wells making water with the oil. The box consists of a main box, a gland, a taper and bonze ring. The taper fits into the main box and is packed with special chilled shot. A rubber ring holds the shot in place.

The "Fitz" Shot Working Barrel is recommended for wells where floating sand troubles. This barrel is run in as any other one. The plunger is run



McINNES STUFFING BOX

on the rods and when bottom is found the plunger is picked up about eight inches and hooked on. The stuffing box is then lifted and about a pound of shot poured down the stuffing box. After pumping 20 or 30 minutes two more pounds of shot are added.

It is claimed that the charge of shot should last about 90 days and when the barrel weakens more shot is poured down the tubing.

Further information on both products can be secured from the manufacturers in Tulsa.

New Simplex Jack

EMSCO DERRICK AND EQUIPMENT COMPANY

Emsco Derrick and Equipment Company, 6701-7101 South Alameda Street, Los Angeles, California, is introducing to the oil industry a new jack called the Emsco Simplex Pumping Jack No. 3. This piece of equipment is an improvement over the old type Simplex jack.

The new jack was designed primarily to use on isolated wells where no central power hook-up is available. The jack may be operated with gas, steam or an electric motor.

The supporting frame of the pack is made of structural steel. Joints, braces and gusset plates are either hot riveted or secured by fitted bolts in reamed holes. Construction is as light as is consistent with strength so that the jack may be skidded in and out of position on the derrick floor with little difficulty.

The base members carrying the supporting parts are of sturdy construction. Bearings on the derrick floor have drilled holes for bolting the jack into position over the hole and present ideal surface for skidding the jack.

Equilibrium of the jack is such that parts may be removed at any time without affecting the over-all balance.

Ten anti-friction type bearings are used in the jack All the bearings and moving parts are lubricated with a

"FITZ" WORKING BARREL

United States Torpedo Company

Manufacturers of

NITRO GLYCERINE and DYNAMITE

Main Office: Electra, Texas. Phone No. 584

TEXAS STATIONS

Electra . .....Phone No. 584
Burkburnett—
M. E. Hannon .....Phone No. 14
Ranger—
J. A. Rapp .....Phone No. 382
Breckenridge—
W. H. Blair .....Phone No. 68
Brownwood—
E. O. Nentwig .....Phone No. 876
Crane, Texas—
J. W. Dailey .....Phone No. 63
McCamey—
C. C. Rupert .....Phone No. 63
Amarillo—
Tex Thornton ..Phones Nos. 4730-21512
Borger—
W. C. Brooks .....Phone No. 49
Olney—
F. W. Ziegler ...Phones Nos. 96 and 20
Muenster—
Glen Buckner .....Phone No. 29

OKLAHOMA STATIONS:

Healdton—
E. H. Simons .....Phone No. 191
Duncan . .....Phone No. 715

All Pioneer Oil Well Shooters

BUY USED PIPE

and Save the Difference

8—6″ used Standard Rigs
6—25 H P used Gas Engines
1—25 H P used Oil Engine
1—35 H P used Oil Engine
8—12x12 used Steam Engines
4—45 H P used Boilers
2—50 H P used Boilers
60,000 ft. 3″ used line pipe
Used Casing 4¾″ to 15½″ Inc.
Used Line Pipe 2″ to 8″ Inc.

We buy abandoned pipe lines and oil wells. If you have any to sell, communicate with us before you dispose of them.

BRANCH STORES
Wichita Falls, Holliday, Vernon, Breckenridge, Texas.

EASTERN HEADQUARTERS
Butler, Penna.

Keystone Pipe & Supply Co.

HOLMES BUILDING
FORT WORTH, TEXAS

CARBON (BLACK DIAMONDS) FOR DIAMOND CORE DRILLS

—IMPORTERS—
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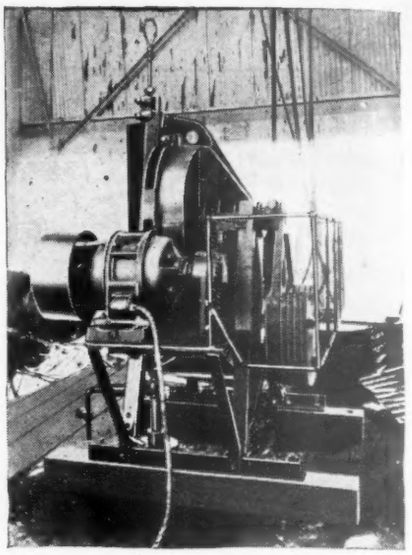
—MANUFACTURERS—
DIAMOND POINTED TOOLS FOR ALL MECHANICAL PURPOSES

WRITE OR WIRE FOR CATALOGUE AND FULL PARTICULARS

THE DIAMOND DRILL CARBON CO.

PARK ROW, NEW YORK, N.Y. CABLE ADDRESS, CREDOTAN, N.Y.



EMSCO SIMPLEX JACK

straight Alemite method of pressure lubrication.

Shafting and other wearing parts are made of nickel steel. Driving gears are herringbone type. All gears are of cut steel.

The jack is provided with a front guard which shields the motor and drive gears. A second guard is employed on the jack largely to afford protection to workmen.

An oil pan is provided below the central casting and connecting to the supporting members in such a way that any surplus oil may be drained into the sump hole.

Derrick floors having sills and posts in good condition may be used as foundation for the jack. Installation is accomplished by skidding the jack into position over the hole and then bolting it in place.

Further information will be provided by the company, or any of its branch offices.

Exclusive arrangement for Mid-Continent distribution of Emsco Chrome-Vanadium steel sprocket chains have recently been made through the Continental Supply Company. The chain in all sizes will be stocked by all the 90 stores operated by Continental. This chain is widely used in rotary drilling and the new arrangement with the Continental Supply Company will make it available in every field of any importance.

William M. Smith, who was for many years associated with the wire rope department of Wickwire Spencer Steel Company and resigned to take up similar duties with another manufacturer of wire rope, has returned to the Wickwire Spencer organization. He will handle the sale of wire rope in the Pittsburgh district. Mr. Smith goes to Pittsburgh with the best wishes of his friends and of the entire Wickwire Spencer organization.

Thoroughness

To stick to a job through thick and thin; to hold in mind at every step the ideal of the ultimate goal; to climb with unfaltering courage over every obstacle . . . these are the attributes of a Man. But they may all be summed up in one pregnant word. *Thoroughness*. And that word expresses the most characteristic quality of the manufacture of every Wickwire product.

WICKWIRE SPENCER STEEL CO.
39 East 42nd Street
New York, N. Y.

Or

V. E. Baum, Petroleum Engr.
222 East Brady St.
Tulsa, Okla.
Stocks carried by
Murray Tool & Supply Co.
Tulsa, Okla.

WICKWIRE SPENCER STEEL CO.

WICKWIRE SPENCER UNIFORM WIRE ROPE
tests better than A. P. I. specifications

Tribal Osage Oil Leases at Public Auction

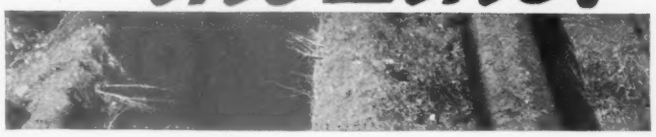
By United States Government

March 28 and 29, 1928

March 28 and 29, 1928, at Pawhuska, Oklahoma, about 90,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25 per cent payable on day of sale, balance in three annual installments, with acceptable security. Within advertised area there are about 9,875 oil wells producing from one barrel to 2,000 barrels each, the total daily production for December, 1927, being about 58,200 barrels; also there are about 85 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for 50 cents each, also logs of producing oil or gas wells for 25 cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs or other information.

A complete ditch at one cut.

Down the Line!



In West Texas, where digging conditions are far from ideal, this Shell pipe line is going in at the rate of 5000 feet per nine-hour day—according to the contractors, The Oklahoma Contracting Company of Dallas.

BUCKEYE PIPE-LINE DITCHERS

Right down the line at the rate of a mile a day requires dependable ditcher construction. Buckeyes have for years been giving just such performance—in oil fields all over the world.

Complete information sent for the asking.

Buckeye Pipe-Line Ditcher working near McCamey, Texas, for The Oklahoma Contracting Company.

"On its way" in West Texas.

The Buckeye Traction Ditcher Co.

FINDLAY, OHIO

There's a Buckeye Sales and Service Office Near You.

for over thirty years **Buckeye**

DUNN TOOLAGRAM

Saved tubing may save a hole

The DUNN *Super-Safety Automatic* TUBING STOP

Will Save the Tubing for You

No need to worry about possible fishing jobs when the Dunn Super-Safety Stop is used. Run it in the hole just as fast as you like—that cuts down on your off-production time.

The Dunn Super-Safety Automatic Tubing Stop will stop parted strings — anywhere in the hole — every time.

Any size sent on approval.

"Dunn Safety means Done Safely"

DUNN
MANUFACTURING COMPANY
OXNARD, CALIFORNIA
Mid-Continent Branch Warehouse-215 E. Archer St. Tulsa, Okla.
Export Sales Office ..... 150 Broadway, New York City

SQUEAKS FROM THE BULL WHEEL

Johnny—Mrs. Jackson, can I use your phone?

Mrs. J.—Certainly, is yours on the blink?

Johnny—No, but Sis is holding the window up with the receiver,. Ma is cutting biscuits with the mouthpiece, and baby is teething on the cord.

Good heavens! I've just remembered that I haven't my latch key with me.

Won't your wife get up and let you in?

I'll make her. I'll scratch on the door and whine, and she'll think her pet dog has been locked out.

Visitor—What a curious looking cat! I don't think I have ever seen one marked quite like that before.

Hostess—Well, you see, my husband is an artist, and he never will look where he wipes his brush.

The vicar was paying a visit to the homes of his poorest parishioners, and in the house of a certain costermonger he asked many questions about the family.

A very grubby, but very cheerful little lad attracted the kindly cleric's attention, and he asked him his name.

"Reginald D'Arcy Smif, sir," replied the lad with a grin.

The vicar turned to the boy's father.

"Whatever did you give him a name like that for?"

"'Cos I want 'im ter be a professional boxer," returned his parent, "and wiv a name like that he'll get a bit o' practice at school."

There was once an American lady traveling in a London bus. She nursed an extremely ugly (homely) child that proved to be a most hypnotic attraction for an old gentleman seated opposite her. The American lady was naturally indignant.

"Rubber!" she said.

The gentleman appeared vastly relieved.

"Thank God!" he said; "I thought it was real."

Clubman—I've struck a perfectly priceless idea. I've arranged to give a man $10,000 on condition that he relieves me of all my worries.

Friend—That's fine, but where are you going to get the $10,000?

Clubman—Ah, that will be his first worry.—Boston Transcript.

"Well, Mrs. Johnsing," a colored physician announced after taking her husband's temperature, "ah has knocked de fever outen him."

"Soh' 'nuff?" was the excited reply. "Am he gwine to get well, den?"

"No'm," answered the doctor. "Dey's no hope fo' him; but you has de satisfaction ob knowin' dat he died cured."

"Put me down," said About Ben Adhem, who didn't know what he was letting himself in for, "as one who loves his fellowmen."

"Fine, sir," snapped the modern angel, whipping out a subscription blank, "and for how much?"

"I'se for a five-day week. How 'bout you, Sam?"

"Man, I'se for a five-day week-end."

"Give me your money or I'll blow your brains out," commanded the holdup. The intended victim calmly laughed in a manner that showed that he didn't care about either. He was a college boy.

Sunday School Teacher — And why did Noah take two of each kind of animal into the ark?

Bright Child—Because he didn't believe the story about the stork.

"Do you know how to make a peach cordial?"

"Sure. Send her a box of candy."

A colored man was asked why he named his child Electricity. He explained: "Mah wife am named Dinah, en mah name's Mose, and electricity am what it is what comes from Dynamos."

"I want a ton of coal."

"Yes, sir. What size?"

"Well, if it's not asking too much, I would you like to have a two thousand pound ton."

"Say, mist'—how much dese apples?"

"Oh, signora, chinga soldi—best in the woild!"

"An' how much dese wan?"

"Oh, ten cents—mooch better!"

"Are you fond of lobster salad, doctor?"

"No, I'm not fond of it, but I'm grateful to it."

"How did Three-Finger Sam come to leave town?"

"He got too influential" answered Cactus Joe. "All our civic associations from the Chamber of Commerce to the Jack Rabbit Social Club decided it was best for him and the Gulch to part."

"I can remember when his word was law."

"That's what spoiled him. He got so looked-up-to an' bossy that he thought he could open a jackpot, draw four cards an' win without a word of criticism."

Why have you not made these alimony payments?

I can't start till week after next, Judge. There are still two instalments due on the engagement ring.